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## ABSTRACT

This study assesses: (1) immediate and long term academic and personal adjustment effects of the Bereiter-Engelmann preschool program and of the traditional enrichment preschool program, as well as the effects of no preschool experience; (2) effects of the above programs on children at the kindergarten level; (3) interactive effects of each type of preschool when combined with each type of kindergarten; and (4) program impact on teachers and parents. Subjects were inner city preschool children: 180 randomly assigned to each of the two experimental programs and 640 to the control group, given no Head Start treatment. Data were obtained on the subject's medical/dental status, use of language other than English, family characteristics, and home and classroom behavior. For the 2-year period studied, conclusions were that the Bereiter-Engelmann program was superior to the enrichment preschool program in positively modifying educational levels. It was found that long term effects need not be qualified by subject data variables. Initial teacher attitudes stacked the success odds against, rather than for, the superior program. It is recommended that the subjects in this study be followed for at least 2 more years, that further research be done on the impact of teacher attitudes; and that continuing program evaluations be made. Appendixes comprise half of the document. (Author/NH)

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FINAL REPORT

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Project Head Start  
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EXPERIMENTS IN HEAD START AND EARLY EDUCATION:  
THE EFFECTS OF TEACHER ATTITUDE AND CURRICULUM  
STRUCTURE ON PRESCHOOL DISADVANTAGED CHILDREN

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The theoretical work of Carl Bereiter and Siegfried Engelmann provided an indispensable foundation for the study and we are indebted to their associate Mrs. Jean Osborn, from the University of Illinois, for serving as a consultant for the Bereiter-Engelmann curriculum. We are also indebted to Mrs. Carolyn Parks, who is on the faculty of the Merrill-Palmer Institute, for serving as a consultant for the Enrichment curriculum. Both of our consultants were extremely competent persons whom we enjoyed working with.

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## ERRATA

page 3,  
add to footnote 3.

The Bereiter-Engelmann experimental programs of this investigation are now known as the Distar<sup>TM</sup> Language I, Distar<sup>TM</sup> Reading I, and Distar<sup>TM</sup> Arithmetic I programs, and are published by Science Research Associates, Inc., Chicago, Illinois. Earlier statements of the philosophy and methods of these programs can be found in Carl Bereiter and Siegfried Engelmann, Teaching Disadvantaged Children in the Preschool, Englewood Cliffs, New Jersey: Prentice-Hall, 1966, and Siegfried Engelmann, Preventing Failure in the Primary Grades, Chicago, Illinois: Science Research Associates, Inc., 1969.

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## CHAPTER I

### INTRODUCTION

Can the levels of academic achievement of disadvantaged preschool and kindergarten children be improved through compensatory educational programs to a level equal to or higher than national norms which reflect the attainments of children from more affluent families? If so, what will be the effects of such compensatory programs on the social and personal adjustment of the students? These, of course, are the fundamental and general guiding questions of this research project.

Much of the current oratory about Head Start is also concerned with these questions. Along with this debate many serious proposals have been made for a wide range of preschool compensatory and follow-through programs. Recently, a few educational theorists, somewhat in the Montessori tradition, have stressed language compensatory activities with emphasis on practice and academic behavioral criteria. These programs focus on overcoming specific and basic weaknesses in language preparation and are proposed against a tradition of developmentally structured enrichment programs which tend to favor an open system and a creative play orientation. The enrichment oriented programs are also likely to emphasize school readiness through social and perceptual enrichment and have few specific academic achievement objectives such as reading, language, and mathematics skills; emphasis is also placed on peer cooperation and adjustment rather than on teacher structuring of student responses, seeing and doing in contrast to language drill and practice,



freedom and independence versus highly structured lesson activities, child-set standards as opposed to academic standards set by adults, and so forth.<sup>1</sup>

Each school of thought seems to contend that the objectives of the other can be indirectly achieved through the attainment of its own objectives. There is, however, a lack of precise information about the effects of these contesting programs for disadvantaged children. Furthermore, within each of these general orientations there are a wide variety of programs available, each of which may have widely divergent effects.

The general objective of this study is to contribute to a better assessment of how one type of enrichment preschool program compares with a language-focused preschool program in its effects on the academic skills and social adjustments of disadvantaged children.

The language-focused program of this study is the Bereiter-Engelmann method of instruction, which emphasizes the reinforcement of certain academic skills, particularly verbal or language skills. The Bereiter-Engelmann program has generated and continues to generate considerable debate over its merits. Perhaps the findings of this study will contribute to some resolution of that debate, but as discussed in the last chapters, more questions are raised than answered.

In addition to our curiosity about the Bereiter-Engelmann program, we were also interested in the type of preschool Head Start program already in existence in our area: an enrichment type program which we thought to be relatively typical of many Head Start programs throughout the country. While we will specify the specific objectives and conduct of each program in greater detail in the latter sections of this report, it is sufficient

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<sup>1</sup>William Fowler, "The Effects of Early Stimulation in The emergence of Cognitive Process," in Robert D. Hess and Roberta Meyer Bear (eds.), Early Education. Chicago: Aldine, 1968, p. 34.

at this point to state that the prime operational objectives of the Enrichment Preschool program were focused on clutural enrichment, social adjustment and readiness for entry into the more typical kindergarten programs.<sup>2</sup>

The Bereiter-Engelmann Preschool program, while of recent origin, is, as already mentioned, nationally known and at the heart of one of the most burning issues in nursery school education today, namely open-ended enrichment programs versus highly structured, detailed methods of instruction.<sup>3</sup> As Fowler points out, however, longitudinal studies relevant to this issue are rare.<sup>4</sup>

This study compares the Bereiter-Engelmann Preschool program with the Enrichment Preschool program in their immediate effects at the end of preschool and their long term effects at the end of kindergarten. Furthermore, this study goes on to examine the effects on students, teachers and parents of the two experimental preschools, and on children with no preschool, when such children are variously assigned to Bereiter-Engelmann and regular enrichment type kindergarten programs.

#### A. THE PROBLEM: AN OVERVIEW<sup>5</sup>

Perhaps one reason for our lack of definitive knowledge about compensatory educational methods for disadvantaged children is the inadequacy of prior research. Most of the studies of Head Start have had the methodological difficulty of curriculum heterogeneity which makes the evaluation of program structure nearly impossible. In addition, studies which have

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<sup>2</sup>See Appendix C for a more detailed description of the philosophy and conduct of the Enrichment Preschool program.

<sup>3</sup>Fowler, p. 34.

<sup>4</sup>Ibid., p. 17.

<sup>5</sup>For one of the most comprehensive review of research on Head Start programs see Edith H. Grotberg, Review of Research, 1965-1969, OEO Pamphlet 6108-13, Office of Economic Opportunity, Research & Evaluation Office, Project Head Start, June 1969.

focused directly on variations in curricular content have been limited by their dependence upon one or a few experimental groups with few subjects and with a comparison group not drawn from the same population. Furthermore, the groups are often homogeneous samples. These methodological problems make generalizations about the effects of structure or characteristics of disadvantaged populations rather tenuous. Studies of the effects of pre-school experiences without adequate conceptualization of structure or sound experimental designs may have contributed to what appear as conflicting findings. Some studies would suggest that initial advantages of participation in Head Start are not maintained, while others seem to indicate that there are long term benefits. Examination of these studies indicate that rather special samples of children were involved, and comparisons between children who participated and those who did not were not warranted since they were not random samples from the same population.

Most studies of preschool children have given some attention to the instrumentation of dependent variables. Attention paid to criterion measures, however, without an equal regard for sample representativeness and experimental design, raise serious questions about the validity of the conclusions drawn from these studies.

#### B. GENERAL OBJECTIVES

The reported research project had as its initial and primary objective the assessment of the immediate and long term academic and personal adjustment effects of a highly structured academic preschool program (the Bereiter-Engelmann Preschool program) and a more traditional developmentally structured Head Start Program (the Enrichment Preschool program). Another general objective was to determine if the impact of the programs was dependent on



the initial attitudes of the teachers toward the curriculum structures under study. More specifically, the following questions provided the focus for the initial research policies:

1. Do disadvantaged children who participate in a highly structured language curriculum program exhibit higher levels of cognitive abilities and social adjustment at the end of the preschool program than children who participate in enrichment programs? Are gains dissipated over the next year, or do one or both programs have long term effects on school performance?
2. What is the relationship between the teacher's attitude toward the programs under investigation and the immediate and long term effects of these programs on the child's school and social performance?

Very often, however, researchers are interested in more than simply stating differences between experimental groups; often they are interested in the magnitudes of effect a treatment may have in particular and in interaction with later experiences in school. As educators and researchers we had similar objectives which could be realized when it became possible to follow-up the preschool experiments with kindergarten experiments using the Bereiter-Engelmann and Enrichment methods and orientations. Hence, our initial objectives were modified to assess: (1) the immediate and long term effects of Bereiter-Engelmann and Enrichment Preschool programs, as well as no preschool experience; (2) the effects of Bereiter-Engelmann and Enrichment Kindergarten programs; and (3) the interactive effects of each type of preschool condition when combined with each type of kindergarten. In other words, the attainment of these objectives would allow us to compare the relative effects of preschool and kindergarten curriculum programs with the interactive effects of certain combinations of preschool and kinder-

garten experience. The above objectives, however, subsume many more specific research objectives.

Finally, our objectives included the development of a set of recommendations as to the direction research should take in answering questions about the efficacy of both Head Start and later follow-through programs for the disadvantaged student.

### C. SPECIFIC RESEARCH OBJECTIVES AND QUESTIONS

#### 1. Background Characteristics of the Students

We were very concerned in this study with being able to describe the students entering each of the experimental treatments in terms of their medical and dental status, use of other languages than English in their homes, intactness of their families, sex and racial identities, behavior adjustment at home such as bedwetting, temper tantrums, insomnia, etc., and their classroom deportment behaviors, such as talking out of turn, striking others, etc. Data relevant to this objective are presented in Chapter II and provide a basis for certain conclusions as to treatment effects.

#### 2. Background Characteristics of the Teachers

We were also interested in being able to describe the pre-experiment attitudes of the teachers so as to control for their effects on the program. Inasmuch as most innovative programs must be implemented in a social context generally committed to the established norms and opposed to major changes, and the Bereiter-Engelmann Program is relatively controversial, it was especially important to assess initial teacher attitudes. As will be discussed in the following chapters, however, we made a mistake in assuming that pretreatment teacher attitudes were more important than later

emerging attitudes and we failed to do a comparable job in assessing attitudes throughout the program. Some data relevant to later teacher attitudes are available, however, and will be presented and discussed.

### 3. Immediate Effects of Head Start Programs

Our questions here concern the impact of (A) the Bereiter-Engelmann Preschool program, (B) the Enrichment Preschool program and (C) the Control Group on the following variables:

- a. Academic Skills Level (as assessed by individual Stanford-Binet intelligence tests).<sup>6</sup>
- b. Parent and Teacher Beliefs and Attitudes

There has been considerable speculation that today's schools are psychologically distant from the homes of the children which they serve. Perhaps satisfying contacts with teachers are rare for some parents. Home visitations, when made, and parental conferences are often perfunctory and involve very little time on the part of the parents. Perhaps many parents believe that the school is only interested in them when their child has misbehaved. Whatever the case, the Head Start and kindergarten programs under investigation in this study have included the objectives of extensive parental involvement in the education of their children. This leads to many questions concerning the conduct and beliefs of teachers and parents of preschool children in the experimental and control groups.

We were particularly interested in assessing and comparing the beliefs of parents and teachers in each of the experimental programs and the control group with regard to: (1) their perceptions of

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<sup>6</sup>Initially it was proposed to use the Illinois Test of Psycholinguistics, subtests Auditory Vocal, Visual Decoding, and Vocal Encoding, to assess concept attainment.



the educational and occupational life chances of their children; (2) their attitudes toward the preschool programs; (3) their children's social and academic adjustment; and (4) their perceptions of the effects of their respective preschool programs on their children.

More specifically the major exploratory belief variables concerning their children, on which the parents and teachers were assessed and compared in this study are:

1. Parents' knowledge of the program
2. Parents' involvement in the program
3. Parents' preferences for involvement
4. Parents' general value assessments of the program
5. Teacher attitude toward the sufficiency of parent involvement
6. Parents' assessment of child's adjustment to others
7. Parents' assessment of child's academic and social adjustment needs
8. Parents' assessment of the extent to which program is fulfilling child's need
9. Parents' assessment of child's attitude toward going on to kindergarten
10. Parents' and teachers' assessments of the expected educational attainment levels of their children
11. Parents' and teachers' assessments of the expected occupational attainment levels of their children
12. Parents' and teachers' assessments of child's concept of the difficulty level of the school activities
13. Parents' and teachers' assessments of the difficulty level of the school activities.

c. Head Start Effects on Parental Migration<sup>7</sup>

To what extent, if any, do preschool compensatory programs stabilize or effect the physical mobility of low income families? This is a particularly relevant question in that (1) the lowest of the low income families, of whom the children are often most educationally disadvantaged, are characterized by high physical mobility; and (2) the school programs are typically set up to accommodate geographically stable families. Students who change schools are not likely to be able to take up where they left off.

In this investigation we were particularly fortunate to have our experimental programs assessed for their possible effects on family mobility by the survey researchers who conducted the parent and teacher interviews. During the process of conducting the interview assignment, it was quickly recognized that the problem of intra-urban mobility would have to be dealt with. Appendix C is a statement by these researchers as to their findings and conclusions about the impact of the Head Start experiments in this study on family geographical stability.

4. Long Term Effects of Head Start Programs in Interaction with Kindergarten Experimental Programs

Our research here focused on preschool impact on academic and social adjustment, the interactive effects of preschool treatment and kindergarten program, and a description of the development of intellectual skills

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<sup>7</sup>See Appendix C for a separate, previously unpublished study conducted by Clifford Bryan, et.al., using randomly drawn parents of students drawn from each of the experimental conditions in this investigation.

over the two year period of this study. Our objectives were to examine the relative impact of the differing preschool treatments separately in both the regular kindergarten and then in the Bereiter-Engelmann Kindergarten. The major academic skills we wished to assess were:

- a. General Intelligence
- b. Achievement in Reading Skills
- c. Achievement in Arithmetic Skills
- d. Achievement in Spelling Skills

The major student adjustment variables assessed were:

- a. Behavioral Deviance from Teacher Norms (direct observations made by trained independent observers)
- b. Reality Orientations<sup>8</sup>
- c. General Social Behavior<sup>8</sup>
- d. Classroom Work Habits<sup>8</sup>
- e. Home Life<sup>8</sup>
- f. Temperament<sup>8</sup>
- g. Absenteeism

Employing data collected on each of the above variables, we then asked the following questions:

- a. Can differences in intelligence and adjustment at the end of kindergarten be predicted beyond chance on the basis of type of preschool the students were in? What are the magnitudes of success and error associated with this prediction?
- b. Can differences in intelligence and adjustment at the end of kindergarten be predicted beyond chance on the basis of which

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<sup>8</sup>Assessed by teacher evaluations.



type of kindergarten the students were in? If so, what are the magnitudes of success and error associated with this prediction?

- c. Can differences in intelligence and adjustment at the end of kindergarten be predicted beyond chance on the basis of the programs the students were in during preschool and kindergarten? What are the magnitudes of success and error associated with this prediction?

In summary, the following presentation focuses upon the academic and social adjustment effects of the Bereiter-Engelmann and Enrichment Head Start and regular kindergarten programs. Also assessed is the impact of the programs on the teachers and parents. An additional study of the impact on parental mobility patterns is included in Appendix C.

## CHAPTER II

### METHODS

In this chapter, information is presented on (A) the populations studied; (B) instruments employed; and (C) modes of analysis.\*

#### A. POPULATION

The general student population from whom data were collected for this study included all inner-city children in a midwest metropolitan city of approximately 384,000, who were eligible for the Head Start Program funded by the Office of Economic Opportunity. During the spring of 1967, the teachers and administrators of eighteen schools in the inner-city, which was defined as a poverty target area by OEO criteria, assembled the names of those children who were qualified to enter Head Start in the following fall (approximate N=1000).

Stratified by neighborhood area in August, 1967 these preschool children were randomly assigned (using a table of random numbers) to either one of the two experimental programs conducted in the neighborhood schools or to the Control Pool as shown in Table 2.1. One hundred and eighty students were randomly assigned to each experimental program and 640 the Control Pool. The lists of children who were randomly drawn for experimental assignment were given to teachers who then contacted the children's parents and encouraged the attendance of their children in the Head Start Program. The teachers were not given any jurisdiction to select students.

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\*Information on teacher training and program surveillance in pre-school has been reported in an earlier report. It is repeated in this report in Appendix E page 176.

In those cases where the parents had moved or could not be encouraged to send their children to Head Start (approximately 3 per classroom of 15 children), the teachers were provided with another randomly drawn list of children's parents to contact and were required to start at the top of this waiting list.

This same procedure was used for replacement of students who dropped out of the program during the school year. However, only those students who were in one of the experimental programs for seven months are included in the findings of this report. A more complete statement of the mobility of the experimental and control subjects is included in Appendix C.

During the summer of 1968, research limitations were imposed by the manner of assignment to type of kindergarten. For example, it was impossible to use random numbers for assignment because of our need to have as many students in the Bereiter-Engelmann kindergarten program as possible who had had previous training in one of the preschool experimental programs. We were able, however, to place a probability sample of Control children into the Bereiter-Engelmann Kindergarten; of course the residual of the Control Pool was assigned to the regular Enrichment Kindergarten program.

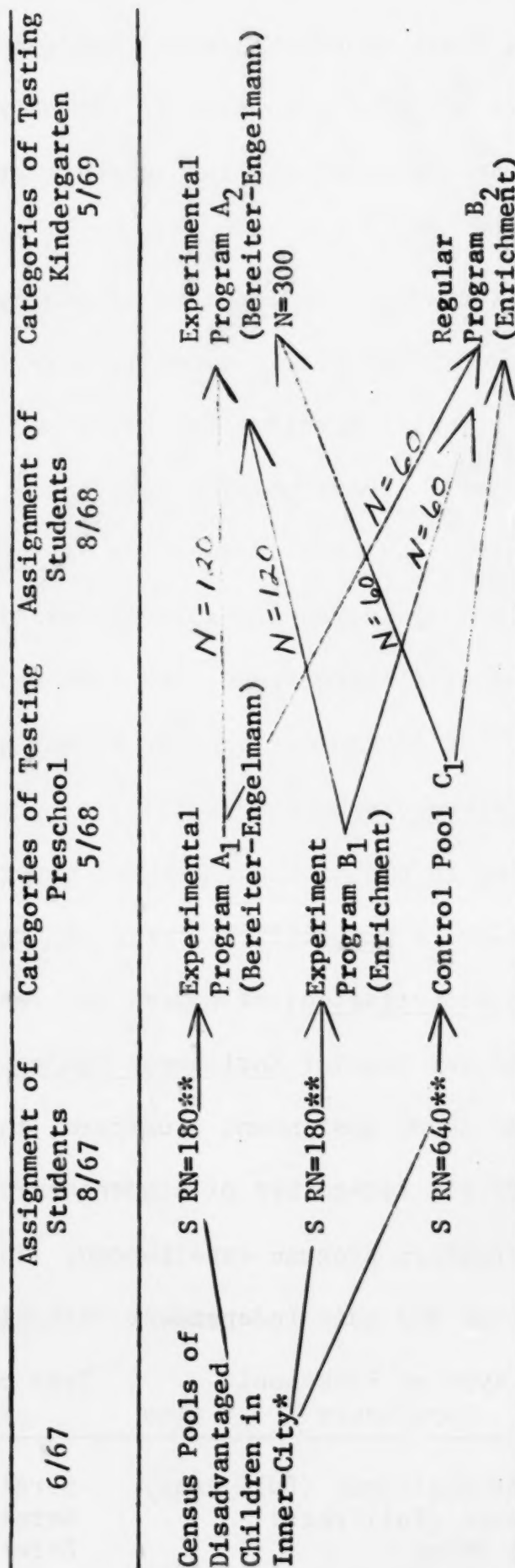
As a consequence of the above assignment procedure, there were in the second year of our study six categories of students grouped on the type of preschool and kindergarten program experienced. These categories were as follows and constitute the main independent variables of this study:

| Experimental Category | N   | Type of Preschool Experience   | plus | Type of Kindergarten Experience |
|-----------------------|-----|--------------------------------|------|---------------------------------|
| I                     | 120 | Bereiter-Englemann (full year) |      | Bereiter-Engelmann              |
| II                    | 120 | Enrichment (full year)         |      | Bereiter-Engelmann              |
| III                   | 60  | Control Group                  |      | Bereiter-Engelmann              |
| IV                    | 60  | Bereiter-Engelmann (full year) |      | Regular Enrichment              |
| V                     | 60  | Enrichment (full year)         |      | Regular Enrichment              |
| VI                    | 120 | Control Pool                   |      | Regular Enrichment              |



TABLE 2.1

DESIGN FOR STUDENT ASSIGNMENT



\*Approx. N=1000

\*\*Stratified by region  
Random assignment

## 1. Description of Students

As shown in Table 2.2, the inner-city children in the study came from families, 40% of which were broken families. Families were considered broken if the child currently lived with one parent only, grandparents, foster parents, or others. The families were considered intact if the children lived with a mother and father, a mother and a stepfather, or a father and stepmother. Table 2.2 also indicates that approximately 59% of the population were nonwhite. Approximately 56% were black and 3% other nonwhites. Less than 3% of the students used another language in the home (of whom less than 1/3 spoke Dutch and less than 2/3 spoke Spanish). Thus, it can be assumed that bilingualism does not seem to be a major characteristic of most of the population studied. Only 2% of the total of the samples at the end of kindergarten were indentified by physicians as having medical problems which would interfere with attendance and participation in school. On the other hand, dentists found 14% of these children exhibited dental problems. This seemed to be rather high but at the writing of this report normative data was not available to the researchers to compare this population with other children.

The findings reported in Table 2.2 also show that the distributions of students by sex, other language used besides English, and medical problems for each of the experimental categories were similar to the total population parameter. (For those interested in the specific types of medical problems characterizing the population at the end of pre-school see Table 2.3). There was a tendency, however, to have more nonwhites in the two experimental programs than in the control pool. There also tended to be a larger proportion of students from nonwhite families in the Bereiter-

Engelmann Kindergarten than in the Regular Kindergarten. If being nonwhite, having medical or dental problems, or being from a broken family has a negative influence on the main dependent variables of achievement and adjustment then the data in Table 2.2 suggest that the biases operate against the preschool Bereiter-Engelmann Program and for the Enrichment Program.

The mean intelligence score on the Stanford-Binet test for the total population of students, which includes all experimental and control groups, is 103.58, with a standard deviation of 14.90 (see Table 2.4). This is much higher than one would expect for disadvantaged children, which suggests the possibility of experimental effects. Data on each group will, of course, be presented in the findings chapter. At this point it is appropriate to mention one of these findings, i.e., that a probability sample of the general population of disadvantaged children at the end of Regular Kindergarten, who did not attend a preschool program, had an average Stanford-Binet I.Q. of only 91.52. Considering the literature on urban children from poverty families, this is to be expected. Poor children without special treatment tend to be one year behind other more affluent children at age 6. On this basis we conclude that our general population of students is characteristic of other disadvantaged children.

Table 2.4 also shows how the general population scored on other academic achievement and teacher ratings of adjustment variables. It should be noted, however, that while such performance levels fall within the average range for all children in this age group, they include children experiencing experimental effects. Hence, this data is provided merely so the reader can in the findings chapters, better assess the contribution to effects in the total population made by each of the experimental conditions. This is discussed in greater detail in later chapters of this report.



TABLE 2.2

PROPORTION OF INNER-CITY DISADVANTAGED CHILDREN BY  
SEX, RACIAL IDENTITY, INTACTNESS OF FAMILY,  
LANGUAGE USED IN HOME, DENTAL STATUS AND MEDICAL STATUS:  
GROUPED ON THE BASIS OF PRESCHOOL AND KINDERGARTEN EXPERIENCES

| N=176<br>Variables                       | Total<br>all<br>groups<br>% | Bereiter-Engelmann Kindergarten                                 |                                                          |                                                  |                                                                 | Regular Kindergarten                                     |                                                  |  |  |
|------------------------------------------|-----------------------------|-----------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------|--|--|
|                                          |                             | Bereiter-<br>Engelmann<br>Preschool<br>N=30 A <sub>1</sub><br>% | Enrich-<br>ment<br>Preschool<br>N=30 B <sub>1</sub><br>% | Control<br>Preschool<br>N=29 C <sub>1</sub><br>% | Bereiter-<br>Engelmann<br>Preschool<br>N=30 A <sub>2</sub><br>% | Enrich-<br>ment<br>Preschool<br>N=28 B <sub>2</sub><br>% | Control<br>Preschool<br>N=29 C <sub>2</sub><br>% |  |  |
| Males                                    | 52                          | 53                                                              | 50                                                       | 62                                               | 47                                                              | 61                                                       | 41                                               |  |  |
| Non-white                                | 59                          | 70                                                              | 73                                                       | 45                                               | 63                                                              | 57                                                       | 45                                               |  |  |
| Broken<br>Family                         | 40                          | 50                                                              | 50                                                       | 45                                               | 33                                                              | 32                                                       | 31                                               |  |  |
| Other than<br>English<br>used in<br>home | 03                          | 03                                                              | 03                                                       | 03                                               | 03                                                              | 04                                                       | 03                                               |  |  |
| Dental<br>Problems                       | 14**                        | 10                                                              | 13                                                       | 03                                               | 03                                                              | 04                                                       | 03                                               |  |  |
| Medical<br>Problems                      | 02**                        | 0*                                                              | 0*                                                       | 0*                                               | 07                                                              | 0*                                                       | 0*                                               |  |  |

\*Percentage  $>0 < .05$ 

\*\*Data obtained during kindergarten year. See Table 2.3 for data obtained during preschool period  
and discussion of differences in Analysis section of this chapter.

TABLE 2.3

PROPORTIONS OF STUDENTS IN PRESCHOOL EXPERIMENTAL GROUPS  
WITH SELECTED MEDICAL AND DENTAL IMPAIRMENTS: END OF PRESCHOOL

| Impairment                                                | Experiment "A <sub>1</sub> "<br>N = 180 | Experiment "B <sub>1</sub> "<br>N = 180 |
|-----------------------------------------------------------|-----------------------------------------|-----------------------------------------|
| 1. Proportion that needed dental work                     | 44%                                     | 39%                                     |
| 2. Proportion with abnormality:                           |                                         |                                         |
| Skin                                                      | 2%                                      | 1%                                      |
| Scalp                                                     | 0%                                      | 0%                                      |
| Eyes - Right                                              | 2%                                      | 9%                                      |
| Eyes - Left                                               | 2%                                      | 9%                                      |
| Eyes - Squint                                             | 2%                                      | 5%                                      |
| Ears - Hearing                                            | 0%                                      | 1%                                      |
| Ears - Discharge                                          | 0%                                      | 0%                                      |
| Ears Packed Serumen                                       | 3%                                      | 1%                                      |
| Nose                                                      | 3%                                      | 1%                                      |
| Tongue                                                    | 0%                                      | 0%                                      |
| Pharynx                                                   | 0%                                      | 1%                                      |
| Tonsils                                                   | 6%                                      | 5%                                      |
| Adenoids                                                  | 7%                                      | 1%                                      |
| Thyroid                                                   | 1%                                      | 0%                                      |
| Lymph Gland                                               | 4%                                      | 2%                                      |
| Chest Shape                                               | 1%                                      | 0%                                      |
| Lungs                                                     | 1%                                      | 0%                                      |
| Heart                                                     | 1%                                      | 1%                                      |
| Abdomen-Massess                                           | 1%                                      | 0%                                      |
| Abdomen-Tenderness                                        | 1%                                      | 0%                                      |
| Abdomen-Hernia                                            | 3%                                      | 2%                                      |
| Spine                                                     | 0%                                      | 0%                                      |
| Genitalia                                                 | 0%                                      | 1%                                      |
| Rectum                                                    | 0%                                      | 0%                                      |
| Bones                                                     | 1%                                      | 1%                                      |
| Joints                                                    | 0%                                      | 1%                                      |
| Feet                                                      | 2%                                      | 1%                                      |
| Posture                                                   | 0%                                      | 0%                                      |
| Neurol-Mental Development                                 | 0%                                      | 0%                                      |
| Motor System                                              | 1%                                      | 0%                                      |
| Sensory System                                            | 0%                                      | 0%                                      |
| Reflexes                                                  | 0%                                      | 0%                                      |
| Hemoglobin                                                | 0%                                      | 8%                                      |
| Urine-Albumin                                             | 0%                                      | 0%                                      |
| Sugar                                                     | 1%                                      | 0%                                      |
| 3. Proportion with condition limiting class participation | 1%                                      | 1%                                      |

**TABLE 2.4**

**MEANS AND STANDARD DEVIATIONS FOR  
MAJOR ACHIEVEMENT AND ADJUSTMENT VARIABLES:  
(END OF KINDERGARTEN, TOTAL SAMPLE N=176)**

| Variables                                    | $\bar{X}$ | S.D.  |
|----------------------------------------------|-----------|-------|
| <u>Academic Achievement:</u>                 |           |       |
| 1. Total I.Q., <u>Stanford-Binet</u>         | 103.58    | 14.90 |
| 2. Reading, <u>WRAT</u> , Standard Scores    | 90.35     | 13.04 |
| 3. Spelling, <u>WRAT</u> , Standard Scores   | 91.85     | 16.15 |
| 4. Arithmetic, <u>WRAT</u> , Standard Scores | 98.94     | 13.17 |
| <u>Teacher Ratings of Adjustment:</u>        |           |       |
| 5. Reality                                   | 5.83      | 1.89  |
| 6. Social Behavior                           | 6.36      | 2.04  |
| 7. Work Habits                               | 5.80      | 2.12  |
| 8. Temperament                               | 6.05      | 1.98  |

In Table 2.5, descriptive data is presented concerning the incidence of certain deviant behaviors occurring in the total population. The incidence of bedwetting, insomnia, fingersucking, nail biting, nervousness, crying, poor eating, speech problems, and temper tantrums, as reported by the children's parents, ranges from 1.5% to 2.3% of the population, depending on the behavior in question, and varies equally in all categories. Again this data is presented as normative information on these variables. However, in as much as these behavioral problems exist in about 2% of the total population and in each experimental category thereof, it can be con-



cluded that such behavioral problems are a constant and do not account for variations among experimental groups.

TABLE 2.5

PROPORTIONS OF STUDENTS EXHIBITING SELECTED  
BEHAVIORAL PROBLEMS, TOTAL ALL PROGRAMS N=176

| Variables          | Regular Kindergarten |            |         | Bereiter-Engelmann Kindergarten |            |         |
|--------------------|----------------------|------------|---------|---------------------------------|------------|---------|
|                    | Bereiter-Engelmann   | Enrichment | Control | Bereiter-Engelmann              | Enrichment | Control |
| 1. Bedwetting      | 02%                  | 02%        | 02%     | 02%                             | 02%        | 02%     |
| 2. Insomnia        | 02                   | 02         | 02      | 02                              | 02         | 02      |
| 3. Finger-sucking  | 02                   | 02         | 02      | 02                              | 02         | 02      |
| 4. Nail Biting     | 02                   | 02         | 02      | 02                              | 02         | 02      |
| 5. Nervousness     | 02                   | 02         | 02      | 02                              | 02         | 02      |
| 6. Crying          | 02                   | 02         | 02      | 02                              | 02         | 02      |
| 7. Poor Eating     | 02                   | 02         | 02      | 02                              | 02         | 02      |
| 8. Speech Problems | 02                   | 02         | 02      | 02                              | 02         | 02      |
| 9. Temper Tantrums | 02                   | 02         | 02      | 02                              | 02         | 02      |

Range in percentages from 1.55 to 2.33, all rounded to 2 per cent.

Table 2.6 presents descriptive data on the incidence of selected categories of observed behavioral deviation from teacher norms. Only the following types of behavioral deviation occurred sufficiently to be considered as useful empirical variables. These were, by item: (1) talking to and interrupting teacher; (5) touching self and interrupting teacher; (7) talking to others and interrupting teacher; (8) touching others and interrupting teacher; (9) striking others; (18) leaving assigned areas; and (26) locomotion which interrupts teacher. The occurrence of deviancy on the other indices of behavioral problems was more rare and is therefore excluded from analysis of program effects.

#### End of Preschool

Near the end of the preschool period (May 1968) academic achievement and school record data were obtained from all preschool children present on the testing days who were in the Bereiter-Engelmann (N=136) and Enrichment (N=138) programs. A probability sample of 38 children was drawn from the Control Pool for testing, of whom 30 showed up for testing as requested. We have no way of ascertaining whether the students who would not or could not be tested differed in relevant ways from those who were tested.

As will be described in Appendix C, random samples of parents from the preschool programs and Control Pool were interviewed. Here, however, parental response was considered a dependent variable. The original random sample size for each of the samples was 30.

In addition, random samples of 30 students from each preschool group were selected and their teachers were administered rating scales and interview schedules.

**TABLE 2.6**

**DISTRIBUTION OF STUDENTS BY OBSERVED  
CLASSROOM DEVIATION FROM TEACHER NORMS (N=142\*)**

| Deviancy                               | Number Who<br>Deviated | Proportion<br>in % |
|----------------------------------------|------------------------|--------------------|
| 1. Talking to and interrupting teacher | 53                     | 37                 |
| 2. Touching and interrupting teacher   | 9                      | 6                  |
| 3. Striking teacher                    | 3                      | 2                  |
| 4. Talking to self                     | 30                     | 21                 |
| 5. Touching self                       | 41                     | 29                 |
| 6. Striking self                       | 6                      | 4                  |
| 7. Talking to others                   | 66                     | 46                 |
| 8. Touching others                     | 53                     | 37                 |
| 9. Striking others                     | 40                     | 28                 |
| 10. Touching learning material         | 15                     | 11                 |
| 11. Handling learning material         | 32                     | 23                 |
| 12. Striking learning material         | 5                      | 4                  |
| 13. Throwing learning material         | 12                     | 8                  |
| 14. Touching non-learning material     | 23                     | 16                 |
| 15. Handling non-learning material     | 31                     | 22                 |
| 16. Striking non-learning material     | 10                     | 7                  |
| 17. Throwing non-learning material     | 6                      | 4                  |
| 18. Leaving assigned area              | 41                     | 29                 |
| 19. Entering assigned area             | 8                      | 6                  |
| 20. Remaining in assigned area         | 8                      | 6                  |
| 21. Leaving non-assigned area          | 5                      | 4                  |
| 22. Entering non-assigned area         | 6                      | 4                  |
| 23. Remaining in non-assigned area     | 9                      | 6                  |
| 24. Walking                            | 20                     | 14                 |
| 25. Running                            | 22                     | 15                 |
| 26. Other locomotive movement          | 93                     | 49                 |

\*Probability sample drawn from all kindergarten experimental categories.

**End of Kindergarten**

In May, 1969, one year after the preschool period, probability samples of 30 subjects were selected from each of the six experimental categories. These samples, the original total of which equalled 180, were reduced to



176 because of absences. Through an error of classification 1 or 2 more or less than 30 were tested in some categories. Table 2.7 indicates the final sample sizes for those in each treatment condition who were administered the major instruments assessing achievement.

TABLE 2.7

SAMPLE SIZES OF STUDENTS, EACH  
TREATMENT CONDITION: END OF KINDERGARTEN

| Experimental<br>Group* | Sample<br>Size |
|------------------------|----------------|
| I                      | 30             |
| II                     | 30             |
| III                    | 29             |
| IV                     | 30             |
| V                      | 28             |
| VI                     | 29             |

\*See Section One, this chapter,  
for description of each category

## 2. Description of Teachers

Teachers already hired by the district to teach in the preschool program were administered a questionnaire (Appendix B) and interviewed concerning their attitudes toward the type of experimental programs to be investigated. The teachers were told that, as much as possible, we wanted to take their views into account in placing them in the preschool program. These teachers were not informed as to the existence of an experiment, (although they later inferred this), or as to the types of

preschool curricula to be offered. On the basis of the teachers' responses, as shown in Table 2.8, the teachers were ranked according to positive and negative attitudes toward a highly academic structured program such as the Bereiter-Engelmann type program (See Appendix B-10 Teacher Attitude Scale).

TABLE 2.8

FREQUENCY DISTRIBUTION OF RANKED PRE-EXPERIMENT TEACHER  
RESPONSES ON INVENTORY OF TEACHER PREFERENCES  
TOWARD BEREITER-ENGELMANN TYPE PRESCHOOL  
PROGRAMS (CB-E)

| <u>Group One*</u>     | <u>Preference for Bereiter-Engelmann Type Program</u> |              |                             |                       |
|-----------------------|-------------------------------------------------------|--------------|-----------------------------|-----------------------|
|                       | <u>Group Two*</u>                                     |              |                             |                       |
| Very<br>Negative<br>1 | Moderately<br>Negative<br>2                           | Neutral<br>3 | Moderately<br>Positive<br>4 | Very<br>Positive<br>5 |
| 7                     | 3                                                     | 2            | 1                           | 1                     |

\*Categorized into two equal N groups as indicated by dotted line. Group 1 includes the seven teachers who were most negative toward Bereiter-Engelmann. Group 2 includes the seven teachers least negative.

The teachers were then split into two groups, seven who were most opposed, and seven least opposed to the Bereiter-Engelmann type program (see Table 2.9). It was inferred that those teachers in Group One who were most negative toward a Bereiter-Engelmann type program would be most positive toward the type of program offered in the Enrichment Preschool Program. Three teachers from Group Two, and four teachers from Group One were randomly assigned to classes in the Bereiter-Engelmann Preschool. Similarly, four teachers from Group Two and three from Group One were randomly assigned to classes in the Enrichment Preschool Program (See Table 2.9).

TABLE 2.9

RANDOM ASSIGNMENT OF GROUP ONE AND GROUP TWO  
TEACHERS TO EXPERIMENTAL  
PROGRAMS "A" AND "B"

|                                   | Bereiter-Engelmann<br>Preschool "A <sub>1</sub> "<br>RN | Enrichment<br>Preschool "B <sub>1</sub> "<br>RN |
|-----------------------------------|---------------------------------------------------------|-------------------------------------------------|
| Group One*<br>Negative toward B-E | 3                                                       | 4                                               |
| Group Two*<br>Positive toward B-E | 4                                                       | 3                                               |

\*See Table 2.8 for further definition of groups.

It is important to note, however, that the extent of negativity or positiveness toward the academically structured Bereiter-Engelmann program is relative. As a matter of fact, only two teachers, one moderately positive and one very positive, were for a Bereiter-Engelmann type program prior to their assignment in 1967 (See Table 2.10). Two teachers were neutral and the other 10 teachers were more or less against the Bereiter-Engelmann type program. In other words, the Enrichment Preschool was bound to have more teachers who initially favored their program than would the Bereiter-Engelmann program.

If the initial attitudes of teachers are important, this means that the assignment procedures have "stacked the cards" against the Bereiter-Engelmann Preschool program in favor of the Enrichment Preschool program. At any rate, through our assignment procedures, any reported positive effects of the Bereiter-Engelmann over the Enrichment program will be difficult to interpret as attributable to a pre-program enthusiasm of the



teachers, inasmuch as such enthusiasm, except in two cases, was lacking. However, on the assumption that the utility of an innovation may be partially judged on the basis of conditions which are likely to impinge on that innovation, the initial aversion of most teachers toward academically focused programs was not viewed as undesirable.

TABLE 2.10

FREQUENCY DISTRIBUTIONS OF TEACHERS' PRE-EXPERIMENT  
ATTITUDES TOWARD "BEREITER-ENGELMANN"  
PROGRAMS

| Attitude Toward <u>Bereiter-Engelmann</u>                         |                       |                             |              |                             |                       |
|-------------------------------------------------------------------|-----------------------|-----------------------------|--------------|-----------------------------|-----------------------|
|                                                                   | Very<br>Negative<br>f | Moderately<br>Negative<br>f | Neutral<br>f | Moderately<br>Positive<br>f | Very<br>Positive<br>f |
| Teachers in<br>Bereiter-<br>Engelmann<br>Preschool<br>Test (8/67) | 3                     | 1                           | 1            | 1                           | 1                     |
| Teachers in<br>Enrichment<br>Program<br>Test (8/67)               | 4                     | 2                           | 1            | 0                           | 0                     |

B. INSTRUMENTATION

The two general dependent variables on which this study focused were academic achievement skills and social adjustment. Other dependent variables investigated were magnitudes of family migration, teacher attitudes, parental attitudes and staff attitudes.

## 1. Academic Achievement Variables<sup>1</sup>

### a. Academic Intelligence (main dependent variable)

Intelligence as commonly measured in this society has to do with those skills and competencies which are necessary to carry out certain types of academic tasks. As a matter of fact, the validity of intelligence tests is generally assumed on the basis of being able to predict other levels of academic performance. However, it is no secret that one can teach students to carry out successfully the specific tasks on so-called "I.Q." tests without affecting greatly their performance levels in school. It is quite another matter to teach the general category of tasks of which the I.Q. items are but a sample. At the end of Head Start programs we often see increased I.Q. scores. We also find that these initial relative gains are often lost in the succeeding years.

In this study we wanted to know the long term effects on intelligence. It was decided that the Stanford-Binet Intelligence Test, the grandfather of them all, and the test often used to validate other intelligence scales, should be employed as our main measure. The use of this scale is so widespread that reliability and validity studies are not reported here.

Perhaps the manner in which the tests were administered deserves some comment. It was decided that individual investigators might favor one experiment over another without being aware of their biases.

As a consequence, Dr. Frank Hager, then in charge of psychometric training at Western Michigan University, was asked to instruct and supervise 15 graduate students in psychometric training. Unknown

as to past curriculum experience, children in the sample were assigned to the psychometric measures for administration of the Stanford-Binet and Wide-Range Achievement Tests at the end of the kindergarten year. (At the end of the preschool year all children completed the early assessment battery). A different set of measures administered the tests in the preschool and kindergarten years.

3. Reading Achievement

The Wide-Range Achievement Test was used to assess reading skills at the end of the kindergarten year. Unfortunately there are no measures of reading skills appropriate for the kindergarten level. Therefore, it will really be another year or two before we can adequately assess experimental effects on reading. However, it was decided that educational researchers ought to be able to obtain some early estimates, even if they were very tentative, of curriculum effects on reading.

4. Spelling Achievement, Arithmetic Achievement

The Wide-Range Achievement Test was also used to assess spelling and arithmetic skills. Again, caution should be exercised in using such data. In two years we will be better able to assess the impact of the experimental conditions on spelling and arithmetic skills.

5. Teacher Ratings of Language and Speech Skills

In addition to the usual standardized instruments mentioned above, it was decided to take into account the teachers' estimates. Teacher estimates, however, can easily be biased by their preferences for one program or another, their sense of surveillance, etc. It was decided that one way of overcoming experimental biases



was to make the experiment more unobtrusive by having school administrators announce to all kindergarten teachers that the rating scales would be filled out on all children as part of normal record keeping and be placed in the files for the following year's teachers. It was then possible to pick out the rating sheets of those sampled for testing (See Appendix B-1).

As shown in Table 2.11, the above indices of academic achievement do not correlate perfectly with one another, with the highest correlation being .60 which means only 36% of the variance is shared. Hence we can conclude that the use of all these measures allows us to tap academic attributes not measured by any one of them. While we did not formally factor analyse these instruments, this provides minimal evidence that separate factors of academic ability level were tapped by each measure.

TABLE 2.11

CORRELATION MATRIX AND ACADEMIC  
ACHIEVEMENT VARIABLES, TOTAL SAMPLE (N=176)

| Variables                         | 1 | 2 | 3  | 4  | 5  |    |
|-----------------------------------|---|---|----|----|----|----|
| Total I.Q., <u>Stanford-Binet</u> | 1 | - | 57 | 43 | 50 | 25 |
| Reading, <u>WRAT</u>              | 2 |   | -  | 46 | 60 | 20 |
| Spelling, <u>WRAT</u>             | 3 |   |    | -  | 45 | 22 |
| Arithmetic, <u>WRAT</u>           | 4 |   |    |    | -  | 24 |
| Language & Speech Skills          | 5 |   |    |    |    | -  |

## 2. Social Adjustment Variables

Three types of adjustment indices were used: teacher ratings, interviews with parents as to selected behaviors of their children, and classroom observations of behavioral deviations from teacher norms.

### Teacher Ratings

All the kindergarten teachers were asked as part of the regular school data collection program, to rate each of their children on the Development Profile Scales (see Appendix B-1). The major adjustment items on which the teachers rated their children from "1" - low, to "9" - high, were as follows:

1. Reality Orientation
2. Social Adjustment
3. Work Habits
4. Temperament

The distributions of teacher ratings are presented in the Appendix, Tables A-1 through A-7. The means and standard deviations for all children are presented in Table 2.4.

### Behavior Adjustment

The parents were specifically asked if their children had exhibited in the past or were currently exhibiting any of the following behaviors:

1. Bedwetting
2. Insomnia
3. Finger Sucking
4. Nail Biting
5. Nervousness

6. Crying
7. Poor Eating Habits
8. Speech Difficulties
9. Temper Problems

The incidence of parent indications of such behavioral adjustment problems is shown in Table 2.5.

As can be seen in Table 2.12, the correlations between the teacher ratings of adjustment and the behavioral indices provided by the parents are low, with no correlation greater than .20, which means that at best there is approximately 96% unexplained variation between two variables. Similarly low correlations occur between the behavioral indices noted by parents, the highest correlation being .39 between nail biting and nervousness.

The highest intercorrelations are between teacher ratings, with correlations ranging from .57 to .74. The .74 correlation between reality orientation rating and social behavior rating still leaves approximately 45% of their variation unshared. Hence, there is sufficient basis in these correlations for using all of these adjustment measures since we may assume that they are not measures of the same phenomenon.

### C. ANALYSIS

In Chapter III, findings are presented which describe the students, teachers and parents at the end of the preschool period. As stated in Chapter I, by first limiting our analysis to preschool effects we will be able to present data and consider general hypotheses relevant to school systems having or considering preschool programs similar to those in this



TABLE 2.12

CORRELATION MATRIX, ADJUSTMENT  
VARIABLES, TOTAL SAMPLE (N=176)

| Variables       |    | 1 | 2  | 3  | 4  | 5  | 6  | 7   | 8  | 9  | 10 | 11 | 12 | 13 |
|-----------------|----|---|----|----|----|----|----|-----|----|----|----|----|----|----|
| Reality         | 1  | - | 74 | 57 | 65 | 10 | 05 | -14 | 02 | 05 | 21 | 02 | 02 | 14 |
| Social Behavior | 2  |   | -  | 58 | 63 | 09 | 01 | -09 | 01 | 09 | 18 | 02 | 08 | 11 |
| Work Habits     | 3  |   |    | -  | 65 | 09 | 05 | 04  | 01 | 03 | 11 | 08 | 01 | 14 |
| Temperament     | 4  |   |    |    | -  | 07 | 00 | 06  | 14 | 12 | 20 | 01 | 01 | 15 |
| Bedwetting      | 5  |   |    |    |    | -  | 06 | 22  | 09 | 14 | 04 | 07 | 03 | 16 |
| Insomnia        | 6  |   |    |    |    |    | -  | 10  | 08 | 26 | 18 | 10 | 04 | 12 |
| Finger Sucking  | 7  |   |    |    |    |    |    | -   | 15 | 07 | 04 | 05 | 18 | 22 |
| Nail Biting     | 8  |   |    |    |    |    |    |     | -  | 39 | 12 | 15 | 15 | 05 |
| Nervousness     | 9  |   |    |    |    |    |    |     |    | -  | 33 | 20 | 07 | 23 |
| Crying          | 10 |   |    |    |    |    |    |     |    |    | -  | 14 | 14 | 03 |
| Poor Eating     | 11 |   |    |    |    |    |    |     |    |    |    | -  | 18 | 05 |
| Speech Problems | 12 |   |    |    |    |    |    |     |    |    |    |    | -  | 05 |
| Bad Temper      | 13 |   |    |    |    |    |    |     |    |    |    |    |    |    |

study, but not of the Bereiter-Engelmann type. Likewise, we will also be able to test and generate empirically based hypotheses relevant to having Bereiter-Engelmann type kindergarten programs without consideration of experiences prior to kindergarten.

Of course, the most important analyses of this study involve a knowledge of the interactive effects of the child's preschool experiences in conjunction with his curriculum experiences in kindergarten. This is presented in Chapter IV. We want to know, for example, what to expect from inner-city children who are given no preschool experience and are placed in a Bereiter-Engelmann type kindergarten in contrast to children who similarly have no preschool training but are placed in a more "typical" Enrichment type kindergarten.

#### End of Preschool

The main independent variables at this stage are the type of preschool experimental conditions: (1) the Bereiter-Engelmann Preschool Program; (2) the Enrichment Preschool Program; and (3) the Control Group. Our major research hypothesis with reference to academic achievement which is in accord with the general hypothesis stated in Chapter I is as follows:

$$H_{R1}: A_1 > B_1 > C_1$$

We also wished to control for attitudinal effects of teachers and neighborhoods in which both experimental programs were active, where teachers could be matched on attitudes toward their programs. In these cases, the data findings are presented merely as descriptive results and no statistical tests are employed since no hypotheses were made in advance of our observations.

The medical status of students in the population does not seem to have

undergone much change from the preschool to the kindergarten period. As shown in Table 2.3, slightly more than 1% of the experimental children in preschool had some medical problem limiting their class participation prognoses. Table 2.2 indicates slightly less than 2% of the inner-city kindergarteners had medical problems. Inasmuch as these differences were slight, no change in medical status of the population is concluded. For those interested in the specific types of medical problems characterizing the population, see Table 2.3.

Table 2.3 also shows, however, that between 39% and 44% of these same children in preschool programs needed dental work. Table 2.2 shows that by kindergarten the proportions who needed dental work dropped considerably for all experimental groups.

#### End of Kindergarten

Data obtained at the end of the kindergarten year will be treated separately and in combination with the data obtained at the end of the preschool year.

While a considerable number of findings will be presented in conventional analysis of variance and "t" test terms, considerable emphasis will be given to regression analysis. Regression analysis will be divided into three phases: (1) the main effects of preschool treatments; (2) the main effects of kindergarten treatments; and (3) the interactive effects of preschool and kindergarten treatment conditions.

Under each of the three subsections mentioned above, the primary assessment of main and interactive effects is based on regression analyses. The regression analyses produced squared regression coefficients ( $R^2$ ) which are statements of the amount of explained variation in the dependent



variables individually and in interaction (e.g., type of curriculum experienced). This, of course, is more valuable than simply knowing that differences in groups were or were not statistically significant. Through the use of regression analysis it was also possible to test differences between regression coefficients of determination. These "F-test" values are equal to the "F" values produced by general analysis of variance and "t" test procedures.

In other words, we can contrast, for example, the predictive power of curriculum interaction conditions of particular preschools plus particular treatments with the predictive power of individual treatment conditions. Rephrased again, we needed to assess certain academic and social adjustment effects resulting from participation or non-participation in Bereiter-Engelmann and Enrichment Head Start programs when variously combined with Bereiter-Engelmann and Regular Kindergarten programs.

Tabulated samples of parental and teacher responses to interviews are also presented in Chapter III. Inasmuch as the questions posed to parents and teachers were similar it was thus possible to contrast differences between teachers and parents as well as to discern variations with each group.

A major section of Chapter III is an independently conducted study of parental migration among inner-city residents and its relationship to the experimental programs. The migration study, conducted by Clifford E. Bryan, John Natzke, Orel Callahan and Earl Enge, is included because they used the parents of the students in this study. A discussion of their procedures is included in their study (See Appendix C).

### CHAPTER III

#### FINDINGS: END OF PRESCHOOL

The data reported in this chapter are the first year findings obtained at the end of the preschool period. Inasmuch as our findings at the end of the preschool period are not critical to our objectives they are presented in this chapter with little interpretation or discussion. In the following chapter, however, certain of these first-year findings are coupled with findings obtained at the end of the kindergarten year and given attention for their educational implications.

##### A. IMPACT ON ACADEMIC SKILLS: INTELLIGENCE

Intelligence: Stanford-Binet - As indicated in Table 3.1, the mean I.Q. of students in the Bereiter-Englemann Preschool was 108.1, while the mean I.Q. of children in the Enrichment Preschool was 105.7. The mean I.Q. of a sample of students from the Control Pool was only 94.8. These findings are supportive of our basic hypotheses of positive experimental effects on language development.

It should also be noted that our Control Group of disadvantaged subjects tended to exhibit I.Q.'s similar to those which other researchers have found among inner-city disadvantaged preschool children (I.Q.=94.8). It is assumed therefore, that the preschool Control Group is probably a valid estimate of those populations for which Head Start Programs were designed, and hence an appropriate criterion group for this study.

In summary, these data (Table 3.1) function as a bench-mark against which to assess the development of children with no preschool experience, and provide an empirical basis again in the kindergarten year for testing the hypothesis that there are preschool effects on intelligence.

**TABLE 3.1** DIFFERENCES IN I.Q. AMONG EXPERIMENTAL AND CONTROL GROUPS: ALL NEIGHBORHOODS COMBINED

| Type of Preschool |                    |       |            |       |           |       |      |     |
|-------------------|--------------------|-------|------------|-------|-----------|-------|------|-----|
|                   | Bereiter-Engelmann |       | Enrichment |       | Control   |       |      |     |
| Variables         | N = 136            |       | N = 138    |       | N = 30*   |       | F**  | p   |
|                   | $\bar{X}$          | SD    | $\bar{X}$  | SD    | $\bar{X}$ | SD    |      |     |
| I.Q.              | 108.1              | 17.90 | 105.7      | 16.69 | 94.8      | 13.46 | 7.25 | .01 |

\*Sample N

\*\*One-way analysis of variance

#### 1. Neighborhood School

We were also able to compare children in each preschool program, controlling for neighborhood and teacher attitude. The data in Table 3.2 show the same tendency, reported above, for children in the Enrichment Preschool not to perform as well on intelligence tests as children in the Bereiter-Engelmann Preschool.



**TABLE 3.2** MEAN I.Q. OF EXPERIMENT GROUPS "A" AND "B", CONTROLLING FOR NEIGHBORHOOD SCHOOL

| School | No. of<br>Classes | Type of Preschool    |       |    |                   |           |       |    |
|--------|-------------------|----------------------|-------|----|-------------------|-----------|-------|----|
|        |                   | Bereiter-Engelmann * |       |    | Enrichment *      |           |       |    |
|        |                   | $\bar{X}$            | SD    | N  | No. of<br>Classes | $\bar{X}$ | SD    | N  |
| A      | 2                 | 113.1                | 17.97 | 24 | 2                 | 105.80    | 17.60 | 25 |
| B      | 2                 | 112.0                | 15.52 | 24 | 2                 | 101.33    | 13.35 | 24 |

\*Teachers favored the type of experiment to which they were assigned in both programs.

## 2. Teacher Attitudes

From the finding in Table 3.3, it may be cautiously inferred that the initial categorization of teachers on the basis of relative disagreement with the Bereiter-Engelmann Preschool method and philosophy is not positively associated with differences in intelligence of students within either the Enrichment Preschool or the Bereiter-Engelmann Preschool programs. However, when post-experimental differences in attitude are taken into account, the relevance of teacher preferences and aversions for the preschool program may show itself to be associated with student performance. In fact, analyses reported in a later section of this chapter (Table 3.5) provide a basis for the hypothesis that post-treatment attitudes are more relevant than pre-program attitudes in predicting classroom outcomes. We are currently collecting teacher interview data for dealing with this methodological problem. Until this is

completed, however, the relative influence of teacher attitudes, if any, and when one should assess those attitudes, is simply conjecture.

TABLE 3.3

DIFFERENCES IN INTELLIGENCE OF STUDENTS GROUPED  
ON THE BASIS OF PRESCHOOL TEACHER'S ATTITUDE  
TOWARD A HIGHLY STRUCTURED ACADEMIC PRESCHOOL  
PROGRAM

|                              | Teacher's<br>Attitude toward<br>Academically Focused<br>Preschool |                   |
|------------------------------|-------------------------------------------------------------------|-------------------|
|                              | Positive                                                          | Negative          |
|                              | $\bar{X}$<br>I.Q.                                                 | $\bar{X}$<br>I.Q. |
| Bereiter-Engelmann Preschool | 111                                                               | 107               |
| Enrichment Preschool         | 103                                                               | 102               |

All groups randomly drawn, N=30 each  
t tests for uncorrelated data

$H_{R1}$ : 111 107; Not sig. (.05 level); Reject

$H_{R2}$ : 103 102; Not sig. (.05 level); Reject

3. Other measures; Illinois Test of Psycho-Linguistic Abilities

While differences in student performance on the ITPA subtests used in this study were in a direction favoring the Bereiter-Engelmann and Enrichment preschool programs over the Control Group, the differences were not significant at the .05 level. However, it should be noted that during the year following the collection of this preschool data, the experimental ITPA tests were completely revised by the publishers. Perhaps the old editions which we used at the end of the preschool year were not appropriate measures.

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1. 1990-1991

[illegible][illegible]



Preschool teachers in the Enrichment Preschool program, on the other hand, did not indicate as much confidence in the outcomes of their programs, except in one area - the student's ability to get along with others. Only slightly over 30% of the preschool teachers in the Enrichment Preschool program indicated that their students would go further in school, get better grades or get a better job. These findings are particularly interesting in light of the fact that the Insular-Ingleson Preschool included only two out of seven teachers who were originally favorable to their being in such a program (Table 2.10).

TABLE 2.1

PRESCHOOL TEACHER PERCEPTIONS OF THE EFFECTS OF  
THEIR PRESCHOOL PROGRAM ON THEIR CHILDREN

|                                                                                                | Teacher Perceptions                         |                                                |
|------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------------|
|                                                                                                | Insular-<br>Ingleson<br>N = 30 <sup>a</sup> | Enrichment<br>Preschool<br>N = 30 <sup>a</sup> |
| <b>A. Perceived effects of students for whom the teachers feel that the program will help:</b> |                                             |                                                |
| 1. go further in school                                                                        | 53%                                         | 37%                                            |
| 2. get better grades in high school                                                            | 50%                                         | 60%                                            |
| 3. get a better job                                                                            | 50%                                         | 33%                                            |
| 4. get along better with others                                                                | 63%                                         | 63%                                            |
| <b>B. Perceived effects of students for whom the teachers feel that the work was:</b>          |                                             |                                                |
| 1. too hard                                                                                    | 33%                                         | 20%                                            |
| 2. too easy                                                                                    | 60%                                         | 67%                                            |
| 3. about right                                                                                 | 27%                                         | 13%                                            |

<sup>a</sup>Initially seven teachers of students whose teachers responded on questionnaires.

Section B of Table 3.5 also shows differences in how the teachers in each program viewed the difficulty level of their programs. Teachers in the Bereiter-Engelmann Preschool indicated that the work in their program was "too easy" for about 40 percent of their children. Also, teachers in the Bereiter-Engelmann Preschool thought that their program was "about right" for 27 percent of their students, while teachers in the Enrichment Preschool thought their program was "about right" for only 13 percent of their students. At the same time however, the Bereiter-Engelmann teachers rated their program as "too hard" for 33 percent of their students, while teachers in the Enrichment program rated their program as "too hard" for only 20 percent of their children.

In summary, although the teachers in the Bereiter-Engelmann Preschool viewed their program as a more difficult program for children than did the Enrichment Preschool teachers, they were more optimistic about the positive effects of their program on later school and occupational outcomes than were the teachers in the Enrichment Preschool program.

## 2. Impact on Parents

In Table 3.6 information is presented relevant to the following explanatory question:

How do the teachers of children in the Bereiter-Engelmann and Enrichment Preschool programs compare in their assessment of program effects among parents?

As can be seen in Table 3.6, the teachers in the two preschool experimental programs differed very little in their attitudes as to the value of parental involvement and support. Generally speaking, it appears as if the only important differences are that 1) even Bereiter-

Engelmann Preschool teachers than Enrichment Preschool teachers felt that their "parents knew quite a bit about" their program; and 2) more of the Bereiter-Engelmann teachers also thought that the schools "should have asked parents for more help" than did Enrichment teachers. One inference which can reasonably be made is that the Bereiter-Engelmann teachers preferred more parental participation than did the Enrichment teachers. This inference is only conjecture, however.

### C. PARENTAL ASSESSMENTS OF PROGRAM EFFECTS

The data in Table 3.7 provide information concerning the following exploratory question:

How do the parents of children in the Bereiter-Engelmann, Enrichment, and Control programs compare in their assessments of these program's effects on their children?

It may be concluded from the data in Table 3.7 that the parents of children in each experimental condition varied very little in their assessments of program effects. Perhaps this finding of no difference is a function of the generality of the questions asked. The data presented in Table 3.8 (of responses to more specific questions) produced much more variation among the parent groups.

As shown in Table 3.8 there were more parents in the Bereiter-Engelmann Preschool program than parents in the Enrichment Preschool program who expected higher academic grades to be forthcoming from their children. In turn, there were more parents in the Enrichment Preschool program who expected higher grades for their children than there were among the Control group of parents.



TABLE 3.6

TEACHER ASSESSMENTS OF THE EFFECTS OF  
THEIR EXPERIMENTAL PROGRAMS ON PARENTS

|                                                                                                                       | Bereiter-<br>Engelmann<br>Preschool<br>N = 6 | Enrich-<br>ment<br>Preschool<br>N = 7 |
|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------|
| Teachers who felt that parents knew quite a bit about the program                                                     | 100%                                         | 71%                                   |
| Teachers who felt that the school had told the parents quite a bit about the program                                  | 100%                                         | 100%                                  |
| Per cent of teachers who asked parents to help in the program                                                         | 83%                                          | 86%                                   |
| The type of parental aid generally requested was primarily:                                                           |                                              |                                       |
| 1. Legislative (planning)                                                                                             | 0%                                           | 14%                                   |
| 2. Executive                                                                                                          | 100%                                         | 86%                                   |
| Teachers who felt that the school should have asked parents for more help                                             | 66%                                          | 29%                                   |
| Teachers who felt that the parents are capable of helping in the program                                              | 100%                                         | 86%                                   |
| Teachers who felt that parents can best help by:                                                                      |                                              |                                       |
| 1. Planning and developing objectives of program                                                                      | 0%                                           | 15%                                   |
| 2. Assisting with extra-curricular details and tasks                                                                  | 83%                                          | 71%                                   |
| 3. Doing both                                                                                                         | 17%                                          | 14%                                   |
| Teachers who feel that it helps the child when teachers and parents meet                                              | 100%                                         | 100%                                  |
| Teachers who feel that they were able to talk with the parents enough to help                                         | 33%                                          | 43%                                   |
| Per cent of teachers who felt that the parents were favorable to the program                                          | 100%                                         | 100%                                  |
| Per cent of teachers who felt that the parents thought it was worth the trouble to send their children to the program | 100%                                         | 100%                                  |

TABLE 3.7

## PARENTAL PERCEPTIONS OF PROGRAM EFFECTS ON THEIR CHILDREN

|                                                                                       | Bereiter-<br>Engelmann<br>Preschool<br>RN = 30 <sup>a</sup> | Enrich-<br>ment<br>Preschool<br>RN = 30 <sup>a</sup> | Control<br>Group<br>RN = 30 <sup>a</sup> |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------|------------------------------------------|
| Parents reporting that:<br>Program has made child more eager<br>to start kindergarten | 97%                                                         | 97%                                                  | 94% <sup>b</sup>                         |
| Work is:                                                                              |                                                             |                                                      |                                          |
| 1. too hard for child                                                                 | --                                                          | --                                                   | --                                       |
| 2. too easy for child                                                                 | 13%                                                         | 27%                                                  | --                                       |
| 3. about right for child                                                              | 87%                                                         | 73%                                                  | --                                       |
| Child acts better at home                                                             | 83%                                                         | 87%                                                  | --                                       |
| Child:                                                                                |                                                             |                                                      |                                          |
| 1. reads, looks at books                                                              | 10%                                                         | 02%                                                  | --                                       |
| 2. is more talkative, better speech                                                   | 04%                                                         | 06%                                                  | --                                       |
| 3. is more mature socially                                                            | 43%                                                         | 47%                                                  | --                                       |
| 4. acts worse                                                                         | --                                                          | 03%                                                  | --                                       |
| 5. is no different, don't know                                                        | 33%                                                         | 23%                                                  | --                                       |
| Program has really helped child:                                                      |                                                             |                                                      |                                          |
| 1. will help in going further<br>in school                                            | 87%                                                         | 100%                                                 | 93% <sup>c</sup>                         |
| 2. to get better grades                                                               | 90%                                                         | 93%                                                  | 93% <sup>c</sup>                         |
| 3. to get a better job                                                                | 83%                                                         | 97%                                                  | 90% <sup>c</sup>                         |
| 4. to get along better with<br>other people                                           | 93%                                                         | 83%                                                  | 93% <sup>c</sup>                         |
| Program helped child get along<br>better with others                                  | 97%                                                         | 97%                                                  | 94% <sup>c</sup>                         |
| Child is getting along very well and<br>fairly well with teachers                     | 100%                                                        | 100%                                                 | 97% <sup>c</sup>                         |
| Child needs to:                                                                       |                                                             |                                                      |                                          |
| 1. get ready to do school work                                                        | 54%                                                         | 47%                                                  | 55%                                      |
| 2. learn to get along with others                                                     | 23%                                                         | 33%                                                  | 39%                                      |
| 3. both                                                                               | 23%                                                         | 20%                                                  | 06%                                      |

<sup>a</sup>Randomly drawn number of students about whom their parents were interviewed<sup>b</sup>Parents in Control asked if child now looks forward to kindergarten<sup>c</sup>Parents in Control Group in these cases were asked if the program would have helped had their child been in attendance

This same pattern is repeated with reference to parental expectations for the educational attainment levels of their children. There was a slightly larger proportion of parents in the Bereiter-Engelmann program who thought that their children would finish college than there were parents in the Enrichment program (Bereiter-Engelmann - 86 percent in contrast to Enrichment - 76 percent). In addition, there was a larger number of parents in the Enrichment program than there were among the Control parents who thought that their children would finish college.

While no such hypothesis was made prior to the collection of the data, and hence no statistical tests were employed, it seems reasonable on the basis of these findings (Table 3.8) to offer for further research and tentative acceptance the following conclusions: The parents of the children in the Bereiter-Engelmann Preschool expect higher educational achievements from their children than the parents in the Enrichment program, who in turn, held higher expectations for their children than did the parents of children who did not receive a preschool experience. It seems reasonable to associate this variation in parental expectations to the difference in the preschool conditions. The possibility should be considered, however, that differences in program effects may be due to the differences in parental expectations. However, since random assignment procedures were used and there was no known bias in the assignment of children to the different programs, we favor the first inference, that differences in parental expectations with reference to educational outcomes were due to differences in preschool experiences.

There were no differences among parents as to occupational hopes for their children. This surprised us. Unfortunately, we do not have relevant data to explain why there should be differences in educational expectations.



but not in occupational expectations. In the final chapter we will offer some conjectures about this.

**TABLE 3.8**

**PARENTAL INDICATIONS OF EXPECTED EDUCATIONAL AND  
OCCUPATIONAL OUTCOMES FOR THEIR CHILDREN**

|                                                                                   | Bereiter-Engelmann<br>Preschool<br>RN = 30*<br>Parent<br>% | Enrichment<br>Preschool<br>RN = 30*<br>Parent<br>% | Control<br>Group<br>RN = 30*<br>Parent<br>% |
|-----------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------|---------------------------------------------|
| Percent of students that<br>are expected to make:                                 |                                                            |                                                    |                                             |
| Mostly B's or higher:                                                             | 80%                                                        | 69%                                                | 60%                                         |
| Mostly C's:                                                                       | 20                                                         | 31                                                 | 40                                          |
| Mostly D's or lower:                                                              | 0                                                          | 0                                                  | 0                                           |
| Percent of students who<br>are expected to have a<br>better than 50-50 chance of: |                                                            |                                                    |                                             |
| Finishing high school:                                                            | 100                                                        | 97                                                 | 90                                          |
| Finishing college:                                                                | 86                                                         | 76                                                 | 61                                          |
| Getting a good job:                                                               | 86                                                         | 86                                                 | 84                                          |

\*From a randomly drawn number of students, whose parents were administered structured interviews. See Appendix C for a description of confounding problems in the random selection of control subjects.

The data in Table 3.9, similar to the data in Table 3.7, provide evidence that the parents differed very little in their desires for involvement, their assessment of their actual involvement, or the nature of their involvements in the preschool programs. Of relevance to the directors of

both programs, perhaps, was the finding that 30 to 37 percent of the parents in each group wanted to talk to the teachers more. This is interesting in view of the fact that both of these programs made far more effort to involve parents than most programs in the researchers' experience.

In summary, the findings do not support hypotheses of parental differences except in two important areas (Table 3.8)--program effects on academic grades and long term effects on educational attainment levels.

TABLE 3.9

PARENTAL INDICATIONS OF THEIR INVOLVEMENT

|                                                                | Bereiter-<br>Engelmann<br>Preschool<br>N = 30 | Enrich-<br>ment<br>Preschool<br>N = 30 |
|----------------------------------------------------------------|-----------------------------------------------|----------------------------------------|
| Parents Reporting That:                                        |                                               |                                        |
| 1. They had talked quite a bit with the teachers               | 90%                                           | 87%                                    |
| 2. It helped for them to talk to teachers                      | 93%                                           | 97%                                    |
| 3. They had been able to talk with the teachers (often enough) | 63%                                           | 70%                                    |
| 4. Teachers asked them to do:                                  |                                               |                                        |
| a. Legislative tasks (planning)                                | 27%                                           | 20%                                    |
| b. Executive tasks (carry out plans)                           | 30%                                           | 33%                                    |
| c. Both types of work                                          | 03%                                           | 06%                                    |
| 5. They would like to do:                                      |                                               |                                        |
| a. Legislative tasks (planning)                                | 06%                                           | 20%                                    |
| b. Executive tasks                                             | 30%                                           | 16%                                    |
| c. Neither - no response                                       | 64%                                           | 64%                                    |

#### D. SUMMARY

##### 1. Impact on Academic Skills

- a. There were variations in measured intelligence at the end of preschool which can be attributed to preschool experimental effects. The mean I.Q. of the Bereiter-Engelmann preschoolers was 108.1, while the Enrichment preschoolers had a mean I.Q. of 105.7; and the Control Pool sample a mean I.Q. of only 94.8. These findings provide an empirical basis for testing the hypothesis again with second year data and a criterion group to assess the effects of no preschool training.
- b. When controlling for neighborhood and teacher's attitude, the differences in intelligence between Bereiter-Engelmann preschoolers (I.Q. = 113) and Enrichment preschoolers (I.Q.=104) increased in comparison with total population values.
- c. Teachers' attitudes toward their program, while initially less favorable among the Bereiter-Engelmann teachers, were not of such importance as to result in lower student achievement among the Bereiter-Engelmann preschoolers as compared to other experimental groups. It is possible, however, that the Bereiter-Engelmann teachers tended to become quite favorable toward their program after attitude testing.

##### 2. Teacher Assessments of Program Effects

- a. Teachers in the Bereiter-Engelmann Preschool program tended to indicate their children would achieve academically and occupationally at higher levels than did the teachers in the Enrichment Preschool program.



- b. Teachers in the Bereiter-Engelmann Preschool tended to rate their program as more difficult and more appropriate for the children than did the teachers in the Enrichment program.
- c. The teachers in the Experimental Preschool program differed very little as to the value of involving parents.

### 3. Parental Assessment of Program

Except with reference to academic grade levels and long-term educational attainment levels there was little discernible difference between the parents of children in the two experimental programs. All parent groups, however, clearly expected the experimental groups to perform at higher levels than the control group children.

In conclusion, the data obtained at the end of the preschool period warranted a follow-up study of the students through the kindergarten year for more definitive assessment of program effects.

## CHAPTER IV

### FINDINGS: END OF KINDERGARTEN

In the previous chapter, findings were reported on the effects of experimental preschool programs when assessed at the end of the one year preschool period. What happens to children in such programs when they go on to kindergarten and then to the higher grades? This, of course, is one of the guiding questions of this study.

An elaboration of this question, however, is crucial. Inasmuch as there are an infinite number of kindergarten programs which can be presented to children it is particularly important to specify the effects of our experimental preschool experiences when they were coupled with the two kindergarten programs in the system under investigation. The first two chapters of this report discuss in greater detail the relevance of such an assessment. In this chapter, findings are presented on the second year effects of experimental preschool and kindergarten conditions.

The first and second sections include information on the academic and intellectual skills attained and the social adjustments of children in the Bereiter-Engelmann and Regular kindergarten programs. Within each kindergarten program data on the children are analyzed by the type of preschool condition experienced.

The third section includes the regression analyses relevant to the interactive effects of various combinations of preschool and kindergarten experience on academic skills and social adjustment.

The fourth section presents our summary of findings concerning changes in intelligence among students as they moved from the preschool experimental conditions through kindergarten. Data presented here couple the findings obtained at the end of preschool with those obtained at the end of

kindergarten and provide the basis for certain of our generalizations made in the next chapter.

The fifth section is a summary of the more important findings presented in this chapter.

#### A. PRESCHOOL IMPACT ON ACADEMIC SKILLS

##### 1. Students in the Regular Kindergarten

The data reported in Table 4.1 indicate that among those economically disadvantaged children who attended the regular kindergarten program, those who came from the Bereiter-Engelmann Preschool tended to score highest on general intelligence, reading skills, spelling skills, and arithmetic skills. In fact, those from the Bereiter-Engelmann Preschool (mean I.Q.=111.7) tended to score one full year above the general population norms which include children from more economically affluent families.

The next highest group of children were those from the Enrichment Preschool program. On general intelligence measures they scored 100.6, slightly lower than the norm for the school system (see Chapter II). They also tended to score lower than the children from the Bereiter-Engelmann Preschool on reading, spelling, and arithmetic measures of achievement.

The lowest group of children in the regular kindergarten program were the children from the Bereiter-Engelmann Preschool on reading, spelling, and arithmetic measures of achievement.

The lowest group of children in the Regular kindergarten program were the children from the Control Pool - children who were not in either pre-school experimental program. Unfortunately this group of children tended to score one full year behind most children, including outer-city children, on intelligence as measured by Stanford-Binet Tests (I.Q.=91.5). This



group of children also ranked lowest on the achievement tests of reading, spelling, and mathematical skills.

TABLE 4.1

ANALYSIS OF VARIANCE OF RANK ORDER OF PERFORMANCE ON INTELLIGENCE AND STANDARDIZED TESTS OF ACHIEVEMENT: REGULAR KINDERGARTEN PROGRAM

| Variables:     |                | Type of Preschool       |      |                      |      |                      |      |
|----------------|----------------|-------------------------|------|----------------------|------|----------------------|------|
|                |                | Bereiter-Engelmann<br>A |      | Enrichment<br>B      |      | Control<br>C         |      |
|                |                | RN <sub>1</sub> = 15    |      | RN <sub>1</sub> = 14 |      | RN <sub>1</sub> = 14 |      |
|                |                | RN <sub>2</sub> = 15    |      | RN <sub>2</sub> = 14 |      | RN <sub>2</sub> = 15 |      |
|                |                | Observed                |      | Observed             |      | Observed             |      |
|                |                | $\bar{X}$               | Rank | $\bar{X}$            | Rank | $\bar{X}$            | Rank |
| 1. I.Q.:       |                |                         |      |                      |      |                      |      |
|                | Stanford-Binet | RN <sub>1</sub>         |      |                      |      |                      |      |
|                |                | RN <sub>2</sub>         |      |                      |      |                      |      |
|                | Total          |                         |      |                      |      |                      |      |
| 2. Reading:    |                |                         |      |                      |      |                      |      |
|                | WRAT:          | RN <sub>1</sub>         |      |                      |      |                      |      |
|                |                | RN <sub>2</sub>         |      |                      |      |                      |      |
|                | Total          |                         |      |                      |      |                      |      |
| 3. Spelling:   |                |                         |      |                      |      |                      |      |
|                | WRAT:          | RN <sub>1</sub>         |      |                      |      |                      |      |
|                |                | RN <sub>2</sub>         |      |                      |      |                      |      |
|                | Total          |                         |      |                      |      |                      |      |
| 4. Arithmetic: |                |                         |      |                      |      |                      |      |
|                | WRAT:          | RN <sub>1</sub>         |      |                      |      |                      |      |
|                |                | RN <sub>2</sub>         |      |                      |      |                      |      |
|                | Total          |                         |      |                      |      |                      |      |

Statistic: "L" Test, One-Way-Analysis of Variance for Rank Order

H<sub>R</sub>: G<sub>p</sub> A > G<sub>p</sub> B > G<sub>p</sub> C

Hypothesis Accepted (p < .05)

See Appendix A: Added Tables for  $\bar{X}$ 's and SD's.

As an anecdotal report, it should be noted that many of the psychometricians who administered the tests reported after testing children in the Control that these children were extremely retarded in language and performance skills. It should be added that the psychometrists were not told whom they were testing, i.e., how the children differed in background school experiences.

Perhaps the low performance of the Control Pool sample is best illustrated by pointing out that only three out of the sample of 30 Control Pool students reached 100 or higher on the Stanford-Binet, with scores of 100, 101, and 103. Most of the rest scored in the 80's and 90's, with some in the 70's. Certainly this group is appropriately labelled "educationally disadvantaged."

## 2. Students in the Bereiter-Engelmann Kindergarten

The data reported in Table 4.2 show a different pattern of effects for preschool experience than that which occurred in the Regular kindergarten program.

For one, the children from the Control Pool who did not receive a preschool experience were able to score on intelligence (I.Q.=104.9) and achievement measures at levels comparable to those from the Enrichment Preschool Program (I.Q.=103.2).

While children in the Bereiter-Engelmann Kindergarten who were from the Bereiter-Engelmann Preschool program tended to rank slightly above those children who were from the Enrichment Preschool or the Control Pool, it is clear from observation of the findings in Table 4.2 that the Enrichment Preschool provided no academic advantages over the children from the Control Pool.

TABLE 4.2

ANALYSIS OF VARIANCE OF RANK ORDER OF PERFORMANCE ON INTELLIGENCE  
AND STANDARDIZED TEST OF ACHIEVEMENT: BEREITER-ENGELMANN KINDERGARTEN

| Variables:      | Type of Preschool                            |               |                                              |               |                                              |               |
|-----------------|----------------------------------------------|---------------|----------------------------------------------|---------------|----------------------------------------------|---------------|
|                 | Bereiter-Engelmann A                         |               | Enrichment B                                 |               | Control C                                    |               |
|                 | RN <sub>1</sub> = 15<br>RN <sub>2</sub> = 15 |               | RN <sub>1</sub> = 15<br>RN <sub>2</sub> = 15 |               | RN <sub>1</sub> = 15<br>RN <sub>2</sub> = 15 |               |
|                 | $\bar{X}$                                    | Observed Rank | $\bar{X}$                                    | Observed Rank | $\bar{X}$                                    | Observed Rank |
| 1. I.Q.:        |                                              |               |                                              |               |                                              |               |
| Stanford-Binet  |                                              |               |                                              |               |                                              |               |
| RN <sub>1</sub> | 108.8                                        | 1             | 100.1                                        | 3             | 102.1                                        | 2             |
| RN <sub>2</sub> | 108.6                                        | 1             | 106.2                                        | 3             | 104.7                                        | 2             |
| Total           | 108.7                                        |               | 103.2                                        |               | 104.9                                        |               |
| 2. Reading:     |                                              |               |                                              |               |                                              |               |
| WRAT:           |                                              |               |                                              |               |                                              |               |
| RN <sub>1</sub> | 95.5                                         | 1             | 89.6                                         | 3             | 89.7                                         | 2             |
| RN <sub>2</sub> | 96.6                                         | 1             | 94.4                                         | 2             | 91.7                                         | 3             |
| Total           | 96.1                                         |               | 92.0                                         |               | 90.8                                         |               |
| 3. Spelling:    |                                              |               |                                              |               |                                              |               |
| WRAT:           |                                              |               |                                              |               |                                              |               |
| RN <sub>1</sub> | 99.1                                         | 1             | 95.0                                         | 2             | 92.4                                         | 3             |
| RN <sub>2</sub> | 96.3                                         | 1             | 93.4                                         | 3             | 93.8                                         | 2             |
| Total           | 97.7                                         |               | 94.2                                         |               | 93.1                                         |               |
| 4. Arithmetic:  |                                              |               |                                              |               |                                              |               |
| WRAT:           |                                              |               |                                              |               |                                              |               |
| RN <sub>1</sub> | 101.5                                        | 1             | 96.9                                         | 3             | 99.6                                         | 2             |
| RN <sub>2</sub> | 103.7                                        | 3             | 107.0                                        | 1             | 103.8                                        | 2             |
| Total           | 102.6                                        |               | 102.1                                        |               | 101.8                                        |               |

Statistic: L test, one-way analysis of variance for rank order

H<sub>R</sub>: G<sub>p</sub> A > G<sub>p</sub> B > G<sub>p</sub> C Hypothesis rejected (p > .05 level)

H<sub>R</sub>: G<sub>p</sub> A > G<sub>p</sub> C > G<sub>p</sub> B Hypothesis rejected (p > .05 level)

See Appendix A, Added Tables for  $\bar{X}$  and SD.



### 3. Comparison of Preschool Effects in Regular and Bereiter-Engelmann Kindergarten Programs

The findings in Table 4.3 show that children from the Bereiter-Engelmann Preschool who went into the Bereiter-Engelmann Kindergarten did not significantly differ (.05 level) from those who went into the regular kindergarten program. These findings counter our initial expectations that after two years of Bereiter-Engelmann programming the children would tend toward general intelligence scores of 120. However, to keep these children approximately one full year above the general population, which includes the more affluent, for the duration of two years, is no mean feat against a national background of regression tendencies for children from many preschool programs.

The data in Table 4.3 also show that the children from the Enrichment Preschool who went into the Bereiter-Engelmann Kindergarten did not significantly differ (.05 level) from those who went into the regular kindergarten program. However, as will be discussed and shown in a later section of this chapter, one group--those who went into the Bereiter-Engelmann Kindergarten (I.Q. 103.5)--may not have significantly regressed from an I.Q. of 105.7 (see Table 3.1) at the end of preschool; while the other group--those from the Enrichment Preschool who went into the regular kindergarten program--scored a mean I.Q. of only 100.6, a possible regression.

The Control Pool samples who went into the Bereiter-Engelmann Kindergarten scored a mean I.Q. of 104.9, as compared to those who went into the regular school program and whose average I.Q. was 91.5. This difference is not only statistically significant but dramatically different as well. Among those children who did not receive preschool training the children who were clearly better off in terms of achieving intellectual

competencies, were those placed in the Bereiter-Engelmann Kindergarten rather than those placed in the Regular Kindergarten program.

TABLE 4.3

DIFFERENCES IN INTELLIGENCE OF STUDENTS IN EACH  
KINDERGARTEN PROGRAM, GROUPED BY TYPE OF PRESCHOOL TREATMENT

| Type of Kindergarten |        |       |         |       |      |      |
|----------------------|--------|-------|---------|-------|------|------|
| Bereiter-Engelmann   |        |       | Regular |       | t    | p    |
| Type of Preschool:   |        |       |         |       |      |      |
| Bereiter-Engelmann   | 108.73 | 13.58 | 111.67  | 14.12 | .81  | NS   |
| Enrichment           | 103.50 | 13.29 | 100.64  | 13.77 | .82  | NS   |
| Control              | 104.86 | 16.82 | 91.52   | 9.49  | 3.75 | .001 |

#### 4. Racial Differences

The findings reported in Table 4.4 illustrate our findings that the black children were able to do equally well as the white children, if anything, the non-white children performed at a slightly higher level. No statistical tests were employed, however, because no differences were hypothesized prior to the observation of these findings. At any rate these findings are sufficient to caution one from attributing the successes of the Bereiter-Engelmann program to racial differences among the children. Furthermore, these findings lend support to the general conclusion that race in and of itself is no excuse for lack of academic achievement.

#### 5. Sex Differences

As reported in Table 4.5, the findings also show that there were no differences between the sexes in each program. Therefore, variations

within each kindergarten program associated with type of preschool experience are not attributable to sex differences.

This assumption is also supported by the distributions of students by sex in each experimental category which is reported in Chapter II. If anything, the more successful Bereiter-Engelmann programs had a slightly larger proportion of males, and the investigators are unaware of any information or discussion which favors males over females in language tasks during the ages four through six. If anything, the literature generally favors the girls at that age.

TABLE 4.4

DIFFERENCES BETWEEN WHITE AND NONWHITE STUDENTS  
CATEGORIZED BY TYPE OF KINDERGARTEN CURRICULUM

| Variables                  | <u>Bereiter-Engelmann</u> |       |                    |       | <u>Regular</u>  |       |                    |       |
|----------------------------|---------------------------|-------|--------------------|-------|-----------------|-------|--------------------|-------|
|                            | White<br>(N=33)           |       | Nonwhite<br>(N=56) |       | White<br>(N=32) |       | Nonwhite<br>(N=55) |       |
|                            | X                         | SD    | X                  | SD    | X               | SD    | X                  | SD    |
| I.Q. <u>Stanford-Binet</u> | 104.58                    | 13.84 | 106.38             | 15.17 | 100.22          | 17.09 | 101.96             | 13.30 |
| Reading <u>WRAT</u>        | 89.76                     | 15.54 | 93.50              | 12.41 | 83.77           | 10.61 | 92.46              | 12.19 |
| Spelling <u>WRAT</u>       | 93.94                     | 15.20 | 93.88              | 12.94 | 84.62           | 23.32 | 93.92              | 11.29 |
| Arithmetic <u>WRAT</u>     | 98.48                     | 13.30 | 104.34             | 12.58 | 90.85           | 11.78 | 99.54              | 11.93 |



TABLE 4.5

DIFFERENCES BETWEEN MALE AND FEMALE STUDENTS  
CATEGORIZED BY TYPE OF KINDERGARTEN CURRICULUM

|                            | <u>Bereiter-Engelmann</u> |       |              |       | <u>Regular</u> |       |              |       |
|----------------------------|---------------------------|-------|--------------|-------|----------------|-------|--------------|-------|
|                            | Male(N=49)                |       | Female(N=40) |       | Male(N=43)     |       | Female(N=44) |       |
|                            | $\bar{X}$                 | SD    | $\bar{X}$    | SD    | $\bar{X}$      | SD    | $\bar{X}$    | SD    |
| I.Q. <u>Stanford-Binet</u> | 107.08                    | 14.09 | 104.03       | 15.28 | 101.56         | 15.73 | 101.25       | 14.50 |
| Reading <u>WRAT</u>        | 93.51                     | 13.10 | 90.40        | 13.28 | 88.84          | 13.79 | 88.30        | 10.67 |
| Spelling <u>WRAT</u>       | 94.35                     | 13.76 | 93.35        | 13.86 | 87.84          | 18.64 | 91.61        | 17.79 |
| Arithmetic <u>WRAT</u>     | 102.55                    | 12.94 | 101.70       | 13.42 | 94.67          | 14.20 | 96.59        | 10.82 |

B. PRESCHOOL IMPACT ON ADJUSTMENT

1. Students in the Regular Kindergarten

Teacher Ratings--With reference to adjustment the same phenomenon occurs, as occurred with intellectual attainments in this kindergarten program. The data in Table 4.6, clearly show that children from the Bereiter-Engelmann Preschool Program were rated by their kindergarten teachers as more reality-oriented, as more socially adjusted, as having better work habits, as having a better home life, and as better tempered, than those children from the Enrichment Preschool Program, who were, in turn, rated higher on these adjustment variables than those from the Control Pool sample.

TABLE 4.6

ANALYSIS OF VARIANCE OF RANK ORDER OF TEACHER RATINGS  
OF ADJUSTMENT: REGULAR KINDERGARTEN PROGRAM

|                     |                 | Type of Preschool                            |   |                                              |   |                                              |   |
|---------------------|-----------------|----------------------------------------------|---|----------------------------------------------|---|----------------------------------------------|---|
|                     |                 | Bereiter-Engelmann<br>A                      |   | Enrichment<br>B                              |   | Control<br>C                                 |   |
|                     |                 | RN <sub>1</sub> = 15<br>RN <sub>2</sub> = 15 |   | RN <sub>1</sub> = 14<br>RN <sub>2</sub> = 14 |   | RN <sub>1</sub> = 15<br>RN <sub>2</sub> = 14 |   |
| Variables:          | Random<br>Gps:  | Observed<br>X Rank                           |   | Observed<br>X Rank                           |   | Observed<br>X Rank                           |   |
| Reality-Orientation | RN <sub>1</sub> | 6.40                                         | 1 | 5.57                                         | 2 | 4.73                                         | 3 |
|                     | RN <sub>2</sub> | 6.87                                         | 1 | 5.71                                         | 2 | 5.07                                         | 3 |
| Social Behavior     | RN <sub>1</sub> | 6.93                                         | 1 | 6.00                                         | 2 | 5.13                                         | 3 |
|                     | RN <sub>2</sub> | 7.47                                         | 1 | 5.86                                         | 2 | 5.43                                         | 3 |
| Work Habits         | RN <sub>1</sub> | 6.73                                         | 1 | 6.36                                         | 2 | 5.00                                         | 3 |
|                     | RN <sub>2</sub> | 6.47                                         | 1 | 4.71                                         | 3 | 5.43                                         | 2 |
| Home Life           | RN <sub>1</sub> | 5.53                                         | 1 | 5.50                                         | 2 | 4.33                                         | 3 |
|                     | RN <sub>2</sub> | 6.13                                         | 1 | 5.50                                         | 2 | 4.57                                         | 3 |
| Temperament         | RN <sub>1</sub> | 6.53                                         | 1 | 6.36                                         | 2 | 5.47                                         | 3 |
|                     | RN <sub>2</sub> | 7.00                                         | 1 | 6.71                                         | 2 | 4.86                                         | 3 |

HR: Gp A > Gp B > Gp C

$p < .05$ , Hypothesis Accepted

Behavioral Observations--The data shown in Table 4.7, on the other hand, do not follow the same pattern of differences in teacher ratings reported above in Table 4.6. The findings reported in Table 4.7, show that there was no systematic difference in behavioral deviancies attributable to preschool experience. This was a considerable surprise to certain of the investigators. On both teacher ratings and behavioral observations the principal investigator expected those students from the

Enrichment Preschool, where more stress was placed on school and personal adjustment, to better adapt to in kindergarten norms.

School Absences--The data reported in Table 4.8, support the conclusion that in both the regular and the Bereiter-Engelmann kindergarten programs, those children from the Bereiter-Engelmann Preschool tended to rank lower in school absences than those from the Enrichment Preschool, who in turn, ranked lower in school absences than did those from the Control groups.

In summary, the data presented in the above tables (Tables 4.6; 4.7; and 4.8) along with the adjustment symptoms reported by the children's parents (e.g., bedwetting; See Chapter II and III), do not support the view that the Bereiter-Engelmann Preschool program produces emotional or adjustment problems among children. If anything, the hypothesis is warranted that the Bereiter-Engelmann Preschool program may contribute more to the adjustment of children in the Regular Kindergarten program, than does the Enrichment Preschool Program.

## 2. Students in Bereiter-Engelmann Kindergarten

Teacher Ratings--The findings for children who were placed in the Bereiter-Engelmann Kindergarten, reported in Table 4.9, present a different picture of preschool effects on adjustment than reported above for children who were placed in the regular kindergarten. For one thing, the teachers did not rate the Bereiter-Engelmann children as more reality-oriented, as more socially adjusted, as having better work habits, as more adjusted at home, or as better tempered. In fact, there were no clear differences among the children when grouped by preschool experience.

These findings, contrary to the expectations of some, lend credence



TABLE 4.7

ANALYSIS OF VARIANCE OF RANK ORDER OF OBSERVED  
CLASSROOM DEVIANCES TO TEACHER NORMS: REGULAR KINDERGARTEN PROGRAM

|                                      |                 | Type of Preschool Program                    |                  |                                             |                  |                                            |                  |
|--------------------------------------|-----------------|----------------------------------------------|------------------|---------------------------------------------|------------------|--------------------------------------------|------------------|
|                                      |                 | Bereiter-Engelmann<br>A                      |                  | Enrichment<br>B                             |                  | Control<br>C                               |                  |
|                                      |                 | RN <sub>1</sub> = 14<br>RN <sub>2</sub> = 14 |                  | RN <sub>1</sub> = 9<br>RN <sub>2</sub> = 10 |                  | RN <sub>1</sub> = 9<br>RN <sub>2</sub> = 9 |                  |
|                                      |                 | %<br>Deviated                                | Observed<br>Rank | %<br>Deviated                               | Observed<br>Rank | %<br>Deviated                              | Observed<br>Rank |
| Talking<br>to<br>Teacher             | RN <sub>1</sub> | 29                                           | 3                | 11                                          | 1                | 22                                         | 2                |
|                                      | RN <sub>2</sub> | 21                                           | 1                | 60                                          | 3                | 33                                         | 2                |
| Touching<br>Self                     | RN <sub>1</sub> | 29                                           | 3                | 1                                           | 2                | 00                                         | 1                |
|                                      | RN <sub>2</sub> | 00                                           | 1                | 50                                          | 3                | 11                                         | 2                |
| Talking<br>to<br>Others              | RN <sub>1</sub> | 43                                           | 2                | 67                                          | 3                | 33                                         | 1                |
|                                      | RN <sub>2</sub> | 36                                           | 1                | 50                                          | 2                | 89                                         | 3                |
| Touching<br>Others                   | RN <sub>1</sub> | 43                                           | 2                | 56                                          | 3                | 33                                         | 1                |
|                                      | RN <sub>2</sub> | 36                                           | 2                | 50                                          | 3                | 33                                         | 1                |
| Striking<br>Others                   | RN <sub>1</sub> | 14                                           | 2                | 33                                          | 3                | 11                                         | 1                |
|                                      | RN <sub>2</sub> | 14                                           | 2                | 30                                          | 3                | 11                                         | 1                |
| Leaving<br>Assigned<br>Areas         | RN <sub>1</sub> | 36                                           | 3                | 33                                          | 2                | 22                                         | 1                |
|                                      | RN <sub>2</sub> | 43                                           | 3                | 10                                          | 1                | 22                                         | 2                |
| Other<br>Loco-<br>motive<br>Movement | RN <sub>1</sub> | 29                                           | 2                | 44                                          | 3                | 22                                         | 1                |
|                                      | RN <sub>2</sub> | 50                                           | 2                | 70                                          | 3                | 33                                         | 1                |

H<sub>R</sub> Gp A > Gp B > Gp C

Not Sig. Reject

No significant direction  
of differencesH<sub>R</sub> Gp B > Gp A > Gp C

Not Sig. Reject

See Appendix A, Added tables for frequencies and totals

TABLE 4.8

ANALYSIS OF VARIANCE OF RANK ORDER OF SCHOOL ABSENCES:  
BEREITER-ENGELMANN AND REGULAR KINDERGARTEN PROGRAM

| Type of Kindergarten | Type of Preschool Program               |               |                                         |               |                                         |               |
|----------------------|-----------------------------------------|---------------|-----------------------------------------|---------------|-----------------------------------------|---------------|
|                      | Bereiter-Engelmann                      |               | Enrichment                              |               | Control                                 |               |
|                      | $RN_1 = 15$<br>$RN_2 = 15$<br>$\bar{X}$ | Observed Rank | $RN_1 = 14$<br>$RN_2 = 14$<br>$\bar{X}$ | Observed Rank | $RN_1 = 14$<br>$RN_2 = 15$<br>$\bar{X}$ | Observed Rank |
| Bereiter-Engelmann   | Days Absent                             |               | Days Absent                             |               | Days Absent                             |               |
| $RN_1$               | 7.9                                     | 1             | 8.9                                     | 2             | 10.9                                    | 3             |
| $RN_2$               | 11.1                                    | 1             | 12.8                                    | 2             | 13.1                                    | 3             |
| Enrichment           |                                         |               |                                         |               |                                         |               |
| $RN_1$               | 8.8                                     | 1             | 9.0                                     | 2             | 10.9                                    | 3             |
| $RN_2$               | 4.3                                     | 1             | 9.9                                     | 2             | 11.6                                    | 3             |

Statistic: "L" test, one-way of variance for rank order

$H_R: \bar{X}_{\text{control}} > \bar{X}_{\text{Enrichment}} > \bar{X}_{\text{B-E}}$

Hypothesis Accepted ( $p < .05$ )

to the idea that for children who are placed in a Bereiter-Engelmann type of kindergarten, preschool experience is irrelevant as far as adjustment is concerned. Perhaps, regardless of background, the Bereiter-Engelmann Kindergarten shapes adjustment and is not as dependent as are other programs on the behavioral patterns the child brings to school.

Behavioral Observations--The conjecture concerning the impact of preschool experiences on adjustment of children placed in a Bereiter-Engelmann type kindergarten program is further supported by the data presented in Table 4.10. There was no systematic difference in the observed behavioral deviancies of children in the Bereiter-Engelmann Kindergarten which were attributable to type of preschool experience.

The conjecture still stands that the Bereiter-Engelmann Kindergarten is not dependent on the type of preschool training in determining the adjustment of its children. It should be cautioned, however, that this conclusion is just that and nothing more, i.e., it is simply conjecture.

School Attendance--Referring back to Table 4.8 it is clear, however, that children from the Bereiter-Engelmann Preschool ranked lowest in school absences, the next lowest in school absences were those from the Enrichment Preschool Program, and the highest were from the Control Pool sample.

TABLE 4.9

ANALYSIS OF VARIANCE OF RANK ORDER OF TEACHER  
RATINGS OF ADJUSTMENT: BEREITER-ENGELMANN KINDERGARTEN

| Variables:          |                 | Type of Preschool    |      |                      |      |                      |      |
|---------------------|-----------------|----------------------|------|----------------------|------|----------------------|------|
|                     |                 | Bereiter-Engelmann   |      | Enrichment           |      | Control              |      |
|                     |                 | A                    |      | B                    |      | C                    |      |
|                     |                 | RN <sub>1</sub> = 15 |      | RN <sub>1</sub> = 15 |      | RN <sub>1</sub> = 14 |      |
|                     |                 | RN <sub>2</sub> = 15 |      | RN <sub>2</sub> = 15 |      | RN <sub>2</sub> = 15 |      |
| Random Gps:         |                 | Observed             |      | Observed             |      | Observed             |      |
|                     |                 | $\bar{X}$            | Rank | $\bar{X}$            | Rank | $\bar{X}$            | Rank |
| Reality-Orientation | RN <sub>1</sub> | 5.20                 | 3    | 5.87                 | 1    | 5.83                 | 2    |
|                     | RN <sub>2</sub> | 5.93                 | 3    | 6.00                 | 2    | 6.33                 | 1    |
| Social Behavior     | RN <sub>1</sub> | 6.00                 | 3    | 6.47                 | 2    | 6.57                 | 1    |
|                     | RN <sub>2</sub> | 7.13                 | 1    | 6.13                 | 3    | 7.07                 | 2    |
| Work Habits         | RN <sub>1</sub> | 5.33                 | 3    | 5.93                 | 2    | 6.14                 | 1    |
|                     | RN <sub>2</sub> | 5.93                 | 1    | 5.80                 | 2    | 5.67                 | 3    |
| Home Life           | RN <sub>1</sub> | 5.47                 | 2    | 4.67                 | 3    | 5.64                 | 1    |
|                     | RN <sub>2</sub> | 4.87                 | 1    | 4.60                 | 2    | 3.93                 | 3    |
| Temperament         | RN <sub>1</sub> | 5.33                 | 3    | 6.07                 | 1    | 5.71                 | 2    |
|                     | RN <sub>2</sub> | 5.93                 | 3    | 6.13                 | 2    | 6.40                 | 1    |

H<sub>R</sub>: Gp A > Gp B > Gp C      Not Sig., .05 level  
H<sub>R</sub>: Gp B > Gp A > Gp C      Not Sig., .05 level  
Hypotheses Rejected



TABLE 4.10

ANALYSIS OF VARIANCE OF RANK ORDER OF OBSERVED  
CLASSROOM DEVIANCES TO TEACHER NORMS:  
BEREITER-ENGELMANN KINDERGARTEN PROGRAM

|                                      |                 | Type of Preschool Program                    |                  |                                              |                  |                                            |                  |
|--------------------------------------|-----------------|----------------------------------------------|------------------|----------------------------------------------|------------------|--------------------------------------------|------------------|
|                                      |                 | Bereiter-Engelmann                           |                  | Enrichment                                   |                  | Control                                    |                  |
|                                      |                 | A                                            |                  | B                                            |                  | C                                          |                  |
|                                      |                 | RN <sub>1</sub> = 14<br>RN <sub>2</sub> = 15 |                  | RN <sub>1</sub> = 15<br>RN <sub>2</sub> = 15 |                  | RN <sub>1</sub> = 9<br>RN <sub>2</sub> = 9 |                  |
|                                      |                 | %<br>Deviated                                | Observed<br>Rank | %<br>Deviated                                | Observed<br>Rank | %<br>Deviated                              | Observed<br>Rank |
| Talking<br>to<br>Teacher             | RN <sub>1</sub> | 29                                           | 1                | 40                                           | 2                | 67                                         | 3                |
|                                      | RN <sub>2</sub> | 60                                           | 3                | 53                                           | 2                | 11                                         | 1                |
| Touching<br>Self                     | RN <sub>1</sub> | 36                                           | 3                | 27                                           | 1                | 33                                         | 2                |
|                                      | RN <sub>2</sub> | 60                                           | 3                | 47                                           | 2                | 33                                         | 1                |
| Talking<br>to<br>Others              | RN <sub>1</sub> | 58                                           | 3                | 27                                           | 1                | 44                                         | 2                |
|                                      | RN <sub>2</sub> | 60                                           | 3                | 47                                           | 2                | 44                                         | 1                |
| Touching<br>Others                   | RN <sub>1</sub> | 36                                           | 2                | 53                                           | 3                | 11                                         | 1                |
|                                      | RN <sub>2</sub> | 33                                           | 2                | 40                                           | 3                | 22                                         | 1                |
| Striking<br>Others                   | RN <sub>1</sub> | 29                                           | 1                | 33                                           | 2.5              | 33                                         | 2.5              |
|                                      | RN <sub>2</sub> | 53                                           | 3                | 33                                           | 2.5              | 33                                         | 2.5              |
| Leaving<br>Assigned<br>Areas         | RN <sub>1</sub> | 21                                           | 1                | 27                                           | 2                | 33                                         | 3                |
|                                      | RN <sub>2</sub> | 27                                           | 1                | 33                                           | 2.5              | 33                                         | 2.5              |
| Other<br>Loco-<br>motive<br>Movement | RN <sub>1</sub> | 29                                           | 2                | 33                                           | 3                | 00                                         | 1                |
|                                      | RN <sub>2</sub> | 33                                           | 2                | 27                                           | 1                | 44                                         | 3                |

H<sub>R</sub> Gp A > Gp B > Gp C      Not Sig., .05 level  
H<sub>R</sub> Gp B > Gp A > Gp C      Not Sig., .05 level  
Hypotheses Rejected

### C. REGRESSION ANALYSES: PRESCHOOL AND KINDERGARTEN EFFECTS

As discussed in Chapter II, we were interested in the following general questions:

1. How much of the variance in academic skills and adjustment at the end of kindergarten can be predicted from knowing which type of kindergarten the children experienced?
2. How much of the variance in academic skills, adjustment skills, and adjustment at the end of kindergarten can be predicted from knowing which type of preschool condition the children experienced?
3. Finally, how much of the variance in academic skills and adjustment at the end of kindergarten can be predicted from a knowledge of both the type of preschool and type of kindergarten experienced by the children?

#### 1. Academic Skills

General Intelligence--As shown in Table 4.11, variations in performance on the Stanford-Binet test of general intelligence at the end of kindergarten could not be significantly accounted for on the basis of type of kindergarten alone. Only about 2 percent ( $R^2=.02$ ) of the differences in intelligence could be attributable to the type of kindergarten the children were in. The "F" value associated with this prediction value was not statistically significant at the .05 level.

On the other hand, type of preschool experience alone accounted for approximately 11 percent ( $R^2=.11$ ) of the variation in intelligence at the end of the kindergarten year. This is statistically significant,

with a probability value in excess of alpha set at the .05 level ( $p < .001$ ). The findings are important, theoretically, in that one may infer that type of preschool experience is more related to intelligence than is type of kindergarten. Caution is necessary, however, for if the only information available were that cited above, one might wrongly infer that type of kindergarten experienced had no effect on intelligence.

As can be seen in Table 4.11, however, when one assesses the interactive effects of type of preschool in conjunction with type of kindergarten it is possible to predict intelligence more accurately than from a knowledge of preschool experience alone. The predictive efficiency of preschool and kindergarten combined is approximately 19 percent ( $R^2 = .19$ ), a statistically significant increase over 13 percent accuracy using preschool and kindergarten separately ( $R^2 = .13$ ).

Achievement Measures--The data reported in added Tables A-3, and A-4, Appendix A, show that variations in spelling and reading achievement were not predicted (.05 level) when the predictor variables were type of preschool or kindergarten.

Only in the area of arithmetic skills was preschool a statistically significant (.05 level) predictor variable. In this case there was no increase in predictive efficiency through the use of the interactive measures of type of preschool in conjunction with type of kindergarten (See Table A-5, Appendix A).

## 2. Adjustment

Teacher Ratings--Selected for regression analyses were teacher ratings of students' reality-orientation, general social adjustment, and general temperament in the classroom. Excluded were teacher ratings of adjustment



TABLE 4.11

MODELS, F-TESTS, R AND  $R^2$  FOR THE PREDICTION  
 OF INTELLIGENCE (STANFORD-BINET) ON THE BASIS  
 OF: (1) TYPE OF KINDERGARTEN; (2) PRESCHOOL  
 CURRICULUM: AND (3) INTERACTION OF PRESCHOOL  
 AND KINDERGARTEN PROGRAM (N=176)

| Predictions                                     | Model      | R   | $R^2$ | df    | F     | P    |
|-------------------------------------------------|------------|-----|-------|-------|-------|------|
| Kindergarten Program                            | Full       | .15 | .02   |       |       |      |
|                                                 | Restricted | .00 | .00   | 1/174 | 3.71  | .055 |
| Preschool Program                               | Full       | .35 | .11   |       |       |      |
|                                                 | Restricted | .00 | .00   | 2/173 | 11.08 | .001 |
| Interaction of<br>Preschool and<br>Kindergarten | Full       | .44 | .19   |       |       |      |
|                                                 | Restricted | .37 | .13   | 2/170 | 5.34  | .006 |

in home and work habits because they are treated elsewhere in this report and because we have more direct measures of home life adjustment (reported in Chapter III).

Tables 4.12, 4.13, and 4.14 show that predictions of reality-orientation, social adjustment, and temperament, based on the interaction of types of preschool and kindergarten, are statistically greater than when using types of preschool or kindergarten separately to make the predictions. However, the accuracy of these predictions ranged only from about 7 to 9 percent, which leaves a great deal (approximately 91 percent error) of social adjustment unaccounted for by curriculum experiences.

Hence, these findings must temper our enthusiasm for any conjecture that differences in adjustment among children can be attributed to either a type of preschool or kindergarten, separately or in interaction. The different school programs, to put it succinctly had only a very modest effect on the social adjustments of the children in this study.

TABLE 4.12

MODELS, F-TESTS, R AND  $R^2$  FOR THE PREDICTION OF TEACHERS' ASSESSMENT OF STUDENTS' REALITY-ORIENTATION

| Predictors                                              | Model      | R   | $R^2$ | df    | F    | p   |
|---------------------------------------------------------|------------|-----|-------|-------|------|-----|
| Type of<br>Preschool                                    | Full       | .10 | .01   |       |      |     |
|                                                         | Restricted | .00 | .00   | 2/173 | 1.10 | .34 |
| Type of<br>Kindergarten                                 | Full       | .10 | .01   |       |      |     |
|                                                         | Restricted | .00 | .00   | 1/174 | 0.06 | .80 |
| Interaction<br>Between<br>Preschool and<br>Kindergarten | Full       | .26 | .07   |       |      |     |
|                                                         | Restricted | .10 | .01   | 2/170 | 4.86 | .01 |

TABLE 4.13

MODELS, F-TESTS, R AND  $R^2$  FOR THE PREDICTION OF TEACHERS' ASSESSMENT OF STUDENTS' SOCIAL ADJUSTMENT BEHAVIOR

| Predictors                                              | Model      | R   | $R^2$ | df    | F    | p   |
|---------------------------------------------------------|------------|-----|-------|-------|------|-----|
| Type of<br>Preschool                                    | Full       | .17 | .03   |       |      |     |
|                                                         | Restricted | .00 | .00   | 2/173 | 3.08 | .05 |
| Type of<br>Kindergarten                                 | Full       | .10 | .01   |       |      |     |
|                                                         | Restricted | .00 | .00   | 1/174 | 1.79 | .18 |
| Interaction<br>Between<br>Preschool and<br>Kindergarten | Full       | .30 | .09   |       |      |     |
|                                                         | Restricted | .20 | .04   | 2/170 | 4.50 | .01 |

TABLE 4.14

MODELS, F-TESTS, R AND  $R^2$  FOR THE PREDICTION OF TEACHERS' ASSESSMENT OF STUDENTS' TEMPERAMENT ADJUSTMENT

| Predictors                                              | Model      | R   | $R^2$ | df    | F    | p   |
|---------------------------------------------------------|------------|-----|-------|-------|------|-----|
| Type of<br>Preschool                                    | Full       | .14 | .02   |       |      |     |
|                                                         | Restricted | .00 | .00   | 2/173 | 2.10 | .13 |
| Type of<br>Kindergarten                                 | Full       | .10 | .01   |       |      |     |
|                                                         | Restricted | .00 | .00   | 1/174 | 0.53 | .47 |
| Interaction<br>Between<br>Preschool and<br>Kindergarten | Full       | .26 | .07   |       |      |     |
|                                                         | Restricted | .14 | .02   | 2/170 | 4.05 | .02 |



#### D. THE DEVELOPMENT OF INTELLIGENCE: PRESCHOOL THROUGH KINDERGARTEN

The idea that intelligence, as measured by our most reliable and valid measures, is not a fixed trait has been so well discussed and supported as to merit little discussion here, except to note briefly that our findings are in accord with this view.

The data in Table 4.15 show that inner-city children from poor families without any preschool experience (Control group), who attended the Regular inner-city Kindergarten, went from an I.Q. of 94.8 to an I.Q. of 91.5. This is, obviously, not a significant drop in intelligence, but it is certainly not a gain. On the other hand, those children who went from the Control Pool with a sample mean I.Q. of 94.8 attained an I.Q. mean of 104.9 when they were placed in the Bereiter-Engelmann Kindergarten.

Those children who were in the Enrichment Preschool (with an I.Q. mean of 105.7) tended in the direction of dropping on intelligence when placed in the Regular inner-city kindergarten program (I.Q.=100.6). This difference in I.Q. (105.7 and 100.6) would have been statistically significant if one had hypothesized a drop prior to the observation of the data. However, since we did not make such a hypothesis, these data are merely an empirical basis for such an hypothesis and not a test of it. The Enrichment children who went into the Bereiter-Engelmann Kindergarten did not, as a group, drop as much as those who went into the Regular Kindergarten program (105.7 as compared to 103.2). In fact, there was no significant difference (.05 level).

For children who were in the Bereiter-Engelmann Preschool there was no drop in intelligence regardless of the kindergarten program they were in.

Nor were there any significant increases. However, when one considers the fact that there is a tendency for groups which differ from the mean to regress toward the mean, this finding--that the Bereiter-Engelmann group of inner-city children remained at approximately one year above the norm for all children including children from more affluent families--takes on tremendous importance for educational theory and practice.

At this point we conclude that no longer is economic or racial status alone sufficient grounds for explaining poor performance of students. Certain educational programs can, it is hypothesized, overcome intellectual deficiencies commonly associated with poverty.

TABLE 4.15

GENERAL INTELLIGENCE AT THE END OF  
PRESCHOOL AND THE END OF KINDERGARTEN:  
2 YEAR LONGITUDINAL STUDY

| Experimental<br>Preschool Condition | End of Preschool<br>'68 | End of Kindergarten<br>'69 |                                      |
|-------------------------------------|-------------------------|----------------------------|--------------------------------------|
|                                     | I.Q. $\bar{X}$          | Regular<br>I.Q. $\bar{X}$  | Bereiter-Engelmann<br>I.Q. $\bar{X}$ |
| Control Group:                      | 94.8                    | 91.5                       | 104.9                                |
| Enrichment:                         | 105.7                   | 100.6                      | 103.2                                |
| Bereiter-Engelmann:                 | 108.1                   | 111.7                      | 108.7                                |

"t" Tests For Correlated Data:

|                                                 |                                      |
|-------------------------------------------------|--------------------------------------|
| $H_{R1}$ : 94.8 > 91.5 /NS, Reject              | $H_{R4}$ : 105.7 > 103.2 /NS, Reject |
| $H_{R2}$ : 104.9 > 94.8 /Sig. 05 level, Accept  | $H_{R5}$ : 111.7 > 108.1 /NS, Reject |
| $H_{R3}$ : 105.7 > 100.6 /Sig. 05 level, Accept | $H_{R6}$ : 108.7 > 108.1 /NS, Reject |

## E. SUMMARY

### 1. Academic Skills

- a. Students in the Regular Kindergarten from the Bereiter-Engelmann Preschool tended to score highest on general intelligence, reading skills, spelling skills and arithmetic skills; they were followed by children from the Enrichment Preschool, who in turn, were followed by children from the Control Pool. On measures of intelligence, the inner-city children from the Bereiter-Engelmann Preschool were approximately one full year above the total population (I.Q.=111.7); children from the Enrichment program were approximately at age level (I.Q.=100.6); and children from the Preschool Control Pool were about one full year behind the general population norms (I.Q.=91.5).
- b. Children in the Bereiter-Engelmann Kindergarten from the preschool Control Pool were able to score slightly above age level (I.Q.=104.9) when assigned to the Bereiter-Engelmann Kindergarten and about equal to those students from the Enrichment Preschool (I.Q.=103.2). Those children from the Bereiter-Engelmann Preschool who attended the Bereiter-Engelmann Kindergarten tended to again score about one year above age level (I.Q.=108.7).
- c. Children from the Bereiter-Engelmann Preschool achieved at about the same high level in both the Regular Kindergarten (I.Q.=111.7) and the Bereiter-Engelmann Kindergarten (I.Q.=108.7).
- d. Children from the preschool Control Pool who went into the Bereiter-Engelmann Kindergarten did much better (I.Q.=104.9) than those who went into the Regular Program Kindergarten (I.Q.=91.5).



- e. Children from the Enrichment Preschool who went into the Regular Kindergarten (I.Q.=100.6) were significantly lower than those who went into the Bereiter-Engelmann Kindergarten (I.Q.=103.5).
- f. No differences in general intelligence or academic achievement were attributable to racial status or sex differences.

## 2. Adjustment

- a. In the Regular Kindergarten, students from the Bereiter-Engelmann Preschool were more adjusted as measured by behavioral observations, teacher ratings, and attendance patterns than children from the Enrichment Preschool, who in turn, were followed by children from the preschool Control Pool.
- b. In the Bereiter-Engelmann Kindergarten, on the other hand, there were no discernible differences in adjustment that could be attributed to preschool experimental conditions, except for attendance patterns. And again, those children from the Bereiter-Engelmann Preschool tended to have better school attendance records than those from the Enrichment Preschool who, in turn, were followed by those from the preschool Control Pool.

## 3. Interaction Effects of Preschool and Kindergarten

- a. The type of kindergarten program experienced is a poor predictor of differences in intelligence or adjustment among all children investigated.
- b. The type of preschool experimental condition experienced is a significant predictor of intelligence (about 11%), but not of adjustment (1% to 3%).
- c. However, combinations of types of preschool conditions and types of kindergarten experienced are relatively powerful predictors of

variations in intelligence (20%) and are relatively modest but significant predictors of adjustment (7% to 9%).

#### 4. Development of Intelligence

a. Variations in intelligence are attributable to differences in experimental school programs.

b. Children from the preschool Control Pool went from an I.Q. of 94.8 to a sample mean I.Q. of 91.5 when placed in the Regular Kindergarten. Those preschool Control Pool, children who went into the Bereiter-Engelmann had a sample mean of 103.2 which was not a significant drop.

d. For poor, inner-city children who were in the Bereiter-Engelmann Preschool (I.Q.=108.1) there was no drop in intelligence on going into either kindergarten program (I.Q.'s 111.7 and 108.7). This group of children overcame natural and statistical tendencies to regress toward the population mean and remained for two years about one full year on intelligence above the total population, including the more affluent.

## CHAPTER V

### CONCLUSIONS

The major conclusion of this study is that levels of academic achievement of disadvantaged preschool and kindergarten children can be improved, through certain compensatory programs, to a level equal to or better than national norms. The defeatist position that the disadvantaged cannot be helped is no longer tenable, either as an excuse for inaction or as an expression of discouragement stemming from prior negative efforts. Our optimistic and positive conclusion that being disadvantaged is not an insurmountable obstacle is not, of course, a conclusion without qualifications. These qualifications are based on sub-conclusions which provide an interpretive framework for the major conclusion; hence, it is advisable to turn to them before further discussing the major conclusion.

#### A. STUDENTS

The findings presented in Chapters III and IV clearly show that performance of participants in the compensatory programs was better than known norms for the disadvantaged. It is logical, therefore, to wonder if the participants and their environments really are and were typically disadvantaged (i.e., could there be something in the families, school environments, etc., that accounts for the observed results of the study?). Based on the data available for this study our conclusion is "no"; at least it is "no" except for the intended differences in the school environments that



constituted the experimental treatment. A brief review of findings will indicate why these conclusions were reached.

#### B. FAMILIES

All of the approximately 1,000 children originally selected as the population for this experiment came from families that met OEO economic standards--the same standards which have been previously used in other research and in a number of action programs. Data collected during the investigation further confirms the typicality of the participants. Forty percent of the students came from broken homes and 59 percent were nonwhite. Further confirmation of the typicality of the students and their families is indirectly provided by looking at those students who did not participate in either preschool program. Their measured I.Q. at the end of preschool was 94 or, essentially, a match for national norms for the disadvantaged. The fact that all students were randomly assigned to either one of the preschool treatment groups or the control groups virtually eliminates the possibility of chance or deliberate selection bias. On the basis of all these points, therefore, it is very improbable that the higher general intelligence levels of the children in the compensatory programs are a result of inherent atypical family characteristics or selection bias.

It should not, however, be concluded that the families of participating students played no part in observed outcomes. This would, in fact, be contrary to the pre-program assumption that disadvantaged children could not experience a positive benefit from the programs independent of their family and neighborhood environments. Indeed, the assumptions were just the opposite. It was hoped that the programs would lead to greater parental

interest and participation in their children's education. In this respect, the findings in Chapter III indicate that from the standpoint of both teachers and parents there was greater interest and participation on the part of parents. It will be pointed out, no doubt, that control parents' children were not in school so, of course, they did not participate. Almost all of these parents, however, had other children in school and the opportunity for interest was not lacking. Some of the most interesting data in this respect is indirect and reported in the appended paper on Intra-urban Migration. While only 1 to 3 percent of the parents with children in the preschool programs moved, 50 percent of the sample of control parents had changed addresses and could not be located. Such an eventuality was not anticipated so there was no specific hypothesis about this, but the evidence is very suggestive that family residential stability was increased by the experimental programs. This is not to suggest that the curriculum content or method of the programs was responsible; rather, it suggests that the deliberate efforts to involve the parents was successful. It seems justifiable, therefore, to conclude that both the intent to involve parents and the belief that such involvement would be beneficial were successful and correct.

#### C. TEACHERS

A great many innovative and/or experimental programs, curricula, and teaching methods have been developed in laboratory schools, and many of them have shown promising results in their pilot stages. When widespread application has been attempted, however, the results have frequently been disappointing. One key variable explaining this disparity in results is the classroom teacher. Teachers in experimental or labora-

tory schools frequently differ from their peers in public classrooms on a number of points. They frequently hold higher professional degrees, have more experience, are accustomed and committed to frequent innovation, and, perhaps most important, frequently have a personal commitment to the success of programs that they may have helped develop. When programs are then implemented in public schools without such teacher enthusiasm and commitment a key variable in the original experiment is missing. It is appropriate to ask if this may be the case in this instance. We conclude that it is not.

In Chapter II it was pointed out that teachers with both positive and negative pre-program attitudes towards the programs were assigned to each program. In the Bereiter-Engelmann program in particular, even the positive teachers were only moderately so. Further, the teachers were not specialists with atypical qualifications; they were typical public school classroom teachers functioning in a public school system. While they did receive in-service training in the methods of the programs they were to function in, this training was of the same sort that any other classroom teacher would receive before adopting an innovative curriculum. Therefore, since there was no unusual personal commitment to program success and there was, in fact, negative commitment among at least half the teachers, and since there was no atypical training and/or specialized skills, we conclude that pre-program teacher attitudes and skills were not responsible for the positive results observed.

It should not be concluded, however, that teacher attitudes are immaterial to program success or failure. The findings reported in Chapter III show that by the end of the preschool year Bereiter-Engelmann teachers were almost uniformly positive in their evaluations of expected results



of the programs for their children. Teachers in both experimental programs were optimistic about life chances for children who participated. With the exception of social adjustment, however, the Bereiter-Engelmann teachers, who were initially least optimistic, became the most optimistic about projected effects of the program. We consider this a very significant finding since it indicates that these programs, particularly the Bereiter-Engelmann, can be implemented in hostile settings and still have an excellent chance of success. The potential for success is not dependent, as has been the case with many experimental programs, on atypically qualified teachers and high initial acceptance of the experimental method used. This essentially negative test of the experimental programs which stacked the cards against success give us even more confidence in the major conclusion that performance of the disadvantaged can be improved.

#### D. MEDICAL-DENTAL

There was relatively little variation in medical and dental problems either between groups or compared to the general population. Our conclusion is that these medical and dental variables studied do not account for variations in performance. It must be pointed out, however, that some potentially relevant medical variables such as nutrition and protein deficiency were not studied, and therefore we can draw no conclusion about the potential impact such variables might have on performance.

While we have concluded that the programs were at least partially successful in changing parental and teacher attitudes, we have maintained that initial atypicality of either of these variables or medical and dental variables singly could not account for the success of the programs. Before going on to discuss the programs, however, another point must be

made. Through regression analysis we have also shown that combinations of initial states of background variables were not associated with program outcomes. Consideration of the potential impact of various combinations of variables is extremely important since outcomes are not resultant from simple linear cause-effect relationships. The learning process and the learning situation are always composed of very complex interactions between many variables. This becomes very apparent as the conclusions about the programs themselves are discussed.

#### E. PROGRAMS

Both the Bereiter-Engelmann and Enrichment preschool programs led to increased levels of general intelligence and academic achievement. At the end of preschool, mean I.Q.s for both groups were at least equal to national norms for the non-disadvantaged and for Bereiter-Engelmann children were a full year above the norm. On this basis alone it might be concluded that both programs were successful with the Bereiter-Engelmann being the most successful. It is not realistic, however, to call this success if the effects do not have the anticipated impact on later education. That is, if the results have a limited chronological life span they are not really successes. The objectives of compensatory education are not to produce particular kinds of scores on standardized tests. The objectives are to have a long range, positive impact on the life chances of the disadvantaged to the extent that such life chances are associated with both quality of education and capability of children to avail themselves of this quality. Conclusions about success or failure, then must be based on the lingering effects these programs have.

The findings in Chapter IV enable us to make conclusions based on



effects one year after preschool. In fact, several conclusions can be drawn from these data. The most disappointing and sad conclusion is about children with no preschool and a traditional kindergarten experience. At best they are one full year behind national norms after only one year of school; and, though not conclusive, the data indicate they may even be regressing below that level. The findings about children with no preschool and a Bereiter-Engelmann Kindergarten experience, however, lead to a far more encouraging, though tentative, conclusion. Although drawn from the same pool of children who had a mean I.Q. of 94 one year earlier, these children had jumped to a level comparable to children with Bereiter-Engelmann Preschool and above children with an Enrichment Preschool experience. This is encouraging because it suggests that the remedial and compensatory properties of the Bereiter-Engelmann program, whatever they are, may well be effective even when administered after the beginning of school. It also indicates that, for the time span studied, one year of Bereiter-Engelmann Kindergarten produces more benefit than a year of Enrichment Preschool plus a year of regular kindergarten.

Children from the Enrichment program who attended regular kindergarten showed definite evidence of regressing to the norm where they had been above it at the end of preschool. This bears out the point that apparent success after one year may be misleading. The positive gains apparently made in Enrichment Preschool did not hold up in a traditional kindergarten of the type most disadvantaged can expect to experience. Enrichment preschoolers in a Bereiter-Engelmann Kindergarten did maintain their level of achievement; but, when we remember that children with no preschool did as well in this program, it strongly suggests that the Enrichment background had a minimal effect on this outcome. The one common element



between successful children from either Control or Enrichment Pools at the end of kindergarten is a Bereiter-Engelmann experience, and the common element between the unsuccessful is a lack of Bereiter-Engelmann experience and regular kindergarten.

Only among those children from a Bereiter-Engelmann Preschool did type of kindergarten experience seem relatively unimportant. They maintained their achievement levels whichever type of program they attended in kindergarten; they were not better than Control children who attended a Bereiter-Engelmann Kindergarten, but neither were they significantly worse, and all groups with at least one year of Bereiter-Engelmann in preschool or kindergarten were above national norms. This leads us to the following conclusions:

1. Children with no preschool and regular kindergarten experience will be seriously disadvantaged educationally;
2. An Enrichment Preschool experience will not produce the lasting success desired and children from such programs will regress toward a state of educational disadvantage;
3. Bereiter-Engelmann compensatory programs produce the most pervasive and lasting success and, over a period of two years, seem to meet the objectives of compensatory education for disadvantaged children;

A tentative conclusion is that, since the Bereiter-Engelmann program produces results above the national norm, the Bereiter-Engelmann may be desirable for the non-disadvantaged as well.

It must be noted that the foregoing conclusions do not explain why the Bereiter-Engelmann program is successful, nor do they speculate about the degree to which these results will hold up in succeeding years.

Further, they do not suggest that no other program would do as well or even better. We are limited to comparisons of the programs of this experiment and the time span of the experiment. Our conclusions are further limited by the fact that not all children were successful in either of the programs. While the needs and deficiencies of some children were met and overcome, those of others were not and we do not know why. There has been speculation that highly structured programs such as the Bereiter-Engelmann will impair adjustment of children. On the basis of findings thus far we conclude that this is not so. Three independent assessments of adjustment--by parents, teachers, and trained observers--revealed no significant differences in the adjustment of children. Where small differences did occur they were in favor of Bereiter-Engelmann children being better rather than less adjusted than other children.

#### F. SUMMARY

Our general conclusion is that the educational levels and opportunities for disadvantaged preschool and kindergarten children can be modified in a positive direction. Of the two experimental programs in this study, the Bereiter-Engelmann was superior in this respect; although we do not conclude that no other program is capable of achieving similar results. Although present conclusions must remain tentative with respect to long term effects, we have concluded that they do not need to be qualified by considerations of atypical parents, teachers, personal characteristics, or medical/dental variables. In those attitudes of teachers, etc., the deviations stacked the odds of success against, not for, the most successful program.



## CHAPTER VI

### RECOMMENDATIONS

Our recommendations are limited in number but major in scope. We shall divide them into two categories, recommendations for theory and research and recommendations for educational programs and practices.

#### A. THEORY AND RESEARCH

Our first general recommendation is that the students in this study be followed for at least another two years. Whether those disadvantaged students with a Bereiter-Engelmann preschool and/or kindergarten background will later regress to become low or average achievers or will maintain their position as high achievers is an open question at this time. We also do not know the long term effects on social and personal adjustment. Beyond two years (the duration of this study) it is impossible to assess program effects of the Bereiter-Engelmann programs.

It would also be regrettable if the two year successes of the Bereiter-Engelmann Head Start and kindergarten programs should lead to a lessening of interest in and evaluation of other experimental programs. As pointed out in the previous chapter, there were some children who apparently did not benefit by the Bereiter-Engelmann programs. In view of this it is recommended that continuing development and evaluation of the Bereiter-Engelmann activities be carried out and that other programs be developed and evaluated, both in the school system investigated in this experiment and in other school systems across the nation.



Where and when additional research is carried out, the value of random assignment of students and teachers to experimental and control groups cannot be over-stressed. The ability to exercise this kind of control is critical to the type of confidence placed in findings. The degree of cooperation given by the school system in this study sets an important precedent that should, we feel, be emulated to provide maximum return from the research energies and resources allocated.

The relevance of parental expectations and interest to educational achievement of children is well documented in prior research. The type of expectations and alleged lack of interest on the part of parents may perhaps be crucial variables in the low achievement of disadvantaged children. The pessimistic feeling that it is difficult to involve parents of disadvantaged children in educational programs was at least partially counteracted by the findings of this study. There continues to be a need, however, to examine both the nature of the effects of parental involvement and the nature of the characteristics of the programs that elicit such successful involvement. In other words, there is a clear need to continue research aimed at specifying the desired type and effect of parental involvement on educational outcomes.

Teachers should constitute another key variable in curriculum research. Beyond our efforts to randomize the effects of positive and negative attitudes of teachers, little was done to assess the differential impact of individual teachers. We feel that this may be one of the most critical understudied variables in this investigation. Further research into the impact of differing expectations and characteristics of teachers is definitely recommended.

Since it was necessary to limit this study to disadvantaged inner-city

children, several questions remain concerning possible program impact on children from more affluent families. It does not necessarily follow that the impact would be as great on children from economically affluent families as it is on children from poor families. But then, who knows? We recommend that further research include a broader socioeconomic spectrum of children.

Related to our above recommendations is also the recommendation that research be directed toward each of the subparts of the program to examine its function. At this point we are uncertain if use of operant principles in the teaching methodology, the structure of the concepts taught, or simply the presentation of important principles to the children are what made the Bereiter-Engelmann program so successful. Neither could we discern the contribution of social context variables, such as the nature of the parents' involvement, the teachers' attitudes, or the actions of the other children which produced the effects. Probably all the curriculum and social context variables interacted with personal attributes to produce the effects. But which were not relevant? What was the nature of the contributions? We recommend that much more effort be focused on both the psychology and sociology of learning. This study is an evaluation of two programs and is no substitute for sound research on the processes and context of learning.

Our research does, however, have important relevance for theories of learning and behavior. Most importantly, we have shown that intelligence as commonly defined and measured is modifiable. In making this assertion we are not solely dependent upon post facto data which has been statistically manipulated. Neither have we been dependent upon a few subjects taught by a few persons highly biased in favor of the more successful treatments.

Our design, our instrumentation, and the conduct of this research, while not of sufficient merit to end debate, is such that we are extremely wary of generalizations that race and poverty are anything more, in our current society, than predictors of where low academic performance is likely to occur. Race and poverty have too long been used as excuses for poor academic performance by social scientists and educators alike. This study does not merely explain the status quo. The treatments in this study overcame cultural deficits.

We recommend, therefore, that our large scale experimental research be replicated. If the findings of others are in accord with ours, the implications for education are several. For the United States our recommendations imply that our traditional educational structure is simply inappropriate to meeting the needs of the poor or of our society.

#### B. EDUCATION

We recommend that the Bereiter-Engelmann Preschool and the Bereiter-Engelmann Kindergarten programs be continued and expanded to include a larger proportion of disadvantaged children.

Our findings at this time do not support the continuance of the Enrichment Preschool unless children from that program are sent to a Bereiter-Engelmann Kindergarten. Another year's follow-up of the children in this study, however, will allow us to be more definitive and less tentative in this recommendation.

We also recommend that the schools on an experimental basis extend the Bereiter-Engelmann type of curriculum up to the first, second, and third grade years. Perhaps it should be experimented with at all grade levels, even at the college level. However, at this time a priority,



based on past successes, should be placed on experimental efforts at the preschool and elementary levels.

We also recommend that other experimental programs at the kindergarten and first grade levels be tried and adequately evaluated. We have concluded that the Bereiter-Engelmann program can have positive and dramatic effects with children. We do not conclude that all other innovative programs will not work as well. Other innovative programs should, however, be treated as experimental programs subject to at least the same rigor of design and evaluation as have the programs investigated in this research. Educators should quit the business of depending on testimonials for evaluation and instead employ sound methodological strategies.

However, and at the expense of contradicting our above recommendations, it is most emphatically recommended that if not the Bereiter-Engelmann Head Start program, then some other Head Start program be employed for a full year for all children of poverty status. The poor performance in academic tasks and social adjustment of students in our Control Pool, who received no Head Start treatment and were in only the regular kindergarten program, is a tragic consequence and example of the ineptness of traditional educational programs in dealing with the children of the poor in our inner-cities, be they white or black.

based on past experience, should be placed on experimental status at the  
present and laboratory levels.

We also recommend that other experimental programs at the laboratory  
and field levels be tried and independently evaluated. We have noted that  
the Project-Program program can have positive and dramatic effects  
with children. We do not conclude that all other innovative programs will  
not work as well. Other innovative programs should, however, be treated  
as experimental programs subject to at least the same rigor of design and  
evaluation as have the programs investigated in this research. Educators  
should put the business of designing an evaluation for evaluation and  
instead employ sound methodological strategies.

#### APPENDIX A

#### ADDED TABLES

It is most experimentally recommended that the Project-Program  
used in this study, when used with other programs be employed for a  
full year in a laboratory or community setting. The poor performance in academic  
and social adjustment of students in our Control group, who received  
no such social enrichment and were in the regular classroom program,  
is a tragic consequence and example of the dangers of traditional  
educational programs in dealing with the children of the poor in our inner-  
cities, be they white or black.

TABLE A-1

FREQUENCY AND PERCENTAGE DISTRIBUTION FOR TEACHER RATINGS ON HEALTH AND PHYSICAL  
DEVELOPMENT FOR KINDERGARTEN STUDENTS BY TYPE OF PRE-SCHOOL AND KINDERGARTEN EXPERIMENTAL CONDITIONS

| Teacher<br>Rating         | Curriculum Experience |      |    |      |     |     |    |     |    |      |    |     |
|---------------------------|-----------------------|------|----|------|-----|-----|----|-----|----|------|----|-----|
|                           | I                     |      | II |      | III |     | IV |     | V  |      | VI |     |
|                           | F                     | P    | F  | P    | F   | P   | F  | P   | F  | P    | F  | P   |
| 1 (low)                   | 0                     | 0%   | 0  | 0%   | 1   | 3%  | 1  | 3%  | 0  | 0%   | 3  | 10% |
| 2                         | 0                     | 0    | 0  | 0    | 0   | 0   | 0  | 0   | 1  | 4    | 0  | 0   |
| 3                         | 1                     | 3    | 0  | 0    | 0   | 0   | 0  | 0   | 0  | 0    | 3  | 10  |
| 4                         | 2                     | 7    | 4  | 13   | 3   | 10  | 0  | 0   | 5  | 18   | 3  | 10  |
| 5                         | 11                    | 37   | 14 | 47   | 16  | 55  | 12 | 40  | 12 | 43   | 14 | 48  |
| 6                         | 4                     | 13   | 3  | 10   | 4   | 14  | 6  | 20  | 1  | 4    | 4  | 14  |
| 7                         | 3                     | 10   | 3  | 10   | 4   | 14  | 7  | 23  | 6  | 21   | 1  | 3   |
| 8                         | 3                     | 10   | 3  | 10   | 0   | 0   | 1  | 3   | 0  | 0    | 0  | 0   |
| 9 (high)                  | 5                     | 17   | 2  | 7    | 1   | 3   | 3  | 10  | 3  | 11   | 1  | 3   |
| Uninterpretable Responses | 1                     | 3    | 1  | 3    | 0   | 0   | 0  | 0   | 0  | 0    | 0  | 0   |
| Total                     | 30                    | 100% | 30 | 100% | 29  | 99% | 30 | 99% | 28 | 101% | 29 | 98% |



TABLE A-2

FREQUENCY AND PERCENTAGE DISTRIBUTION FOR TEACHER RATINGS ON HOME ADJUSTMENT  
FOR KINDERGARTEN STUDENTS BY TYPE OF PRE-SCHOOL AND KINDERGARTEN EXPERIMENTAL EXPERIENCE

| Teacher<br>Rating            | Curriculum Experience |      |    |     |     |     |    |     |    |      |    |     |
|------------------------------|-----------------------|------|----|-----|-----|-----|----|-----|----|------|----|-----|
|                              | I                     |      | II |     | III |     | IV |     | V  |      | VI |     |
|                              | F                     | P    | F  | P   | F   | P   | F  | P   | F  | P    | F  | P   |
| 1 (low)                      | 2                     | 7%   | 0  | 0%  | 0   | 0%  | 1  | 3%  | 0  | 0%   | 2  | 7%  |
| 2                            | 0                     | 0    | 0  | 0   | 0   | 0   | 1  | 3   | 0  | 0    | 2  | 7   |
| 3                            | 1                     | 3    | 4  | 13  | 4   | 14  | 0  | 0   | 1  | 4    | 3  | 10  |
| 4                            | 5                     | 17   | 10 | 33  | 1   | 3   | 4  | 13  | 4  | 14   | 7  | 24  |
| 5                            | 8                     | 27   | 10 | 33  | 9   | 31  | 6  | 20  | 13 | 46   | 9  | 31  |
| 6                            | 0                     | 0    | 1  | 3   | 3   | 10  | 5  | 17  | 3  | 11   | 4  | 14  |
| 7                            | 2                     | 7    | 2  | 7   | 6   | 21  | 9  | 30  | 5  | 18   | 0  | 0   |
| 8                            | 5                     | 17   | 1  | 3   | 1   | 3   | 3  | 10  | 1  | 4    | 1  | 3   |
| 9 (high)                     | 4                     | 13   | 1  | 3   | 1   | 3   | 1  | 3   | 1  | 4    | 1  | 3   |
| Uninterpretable<br>Responses | 3                     | 10   | 1  | 3   | 4   | 14  | 0  | 0   | 0  | 0    | 0  | 0   |
| Total                        | 30                    | 101% | 30 | 98% | 29  | 99% | 30 | 99% | 28 | 101% | 29 | 99% |

TABLE A-3

FREQUENCY AND PERCENTAGE DISTRIBUTION FOR TEACHER RATINGS ON TEMPERAMENT FOR KINDERGARTEN  
STUDENTS BY TYPE OF PRE-SCHOOL AND KINDERGARTEN EXPERIMENTAL CONDITIONS

| Teacher<br>Ratings           | Curriculum Experience |      |    |     |     |     |    |      |    |      |    |      |
|------------------------------|-----------------------|------|----|-----|-----|-----|----|------|----|------|----|------|
|                              | I                     |      | II |     | III |     | IV |      | V  |      | VI |      |
|                              | F                     | P    | F  | P   | F   | P   | F  | P    | F  | P    | F  | P    |
| 1 (low)                      | 2                     | 7%   | 0  | 0%  | 0   | 0%  | 0  | 0%   | 0  | 0%   | 0  | 0%   |
| 2                            | 1                     | 3    | 0  | 0   | 3   | 10  | 0  | 0    | 0  | 0    | 0  | 0    |
| 3                            | 2                     | 7    | 0  | 0   | 1   | 3   | 0  | 0    | 1  | 4    | 3  | 10   |
| 4                            | 0                     | 0    | 6  | 20  | 2   | 7   | 0  | 0    | 3  | 11   | 9  | 31   |
| 5                            | 8                     | 27   | 7  | 23  | 7   | 24  | 6  | 20   | 4  | 14   | 6  | 21   |
| 6                            | 3                     | 10   | 4  | 13  | 1   | 3   | 6  | 20   | 3  | 11   | 4  | 14   |
| 7                            | 5                     | 17   | 7  | 23  | 7   | 24  | 7  | 23   | 10 | 36   | 5  | 17   |
| 8                            | 5                     | 17   | 3  | 10  | 3   | 10  | 2  | 7    | 3  | 11   | 2  | 7    |
| 9 (high)                     | 3                     | 10   | 3  | 10  | 5   | 17  | 8  | 27   | 4  | 14   | 0  | 0    |
| Uninterpretable<br>Responses | 1                     | 3    | 0  | 0   | 0   | 0   | 1  | 3    | 0  | 0    | 0  | 0    |
| Total                        | 30                    | 101% | 30 | 99% | 29  | 98% | 30 | 100% | 28 | 101% | 29 | 100% |

TABLE A-4

FREQUENCY AND PERCENTAGE DISTRIBUTION FOR TEACHER RATINGS IN WORK HABITS FOR  
KINDERGARTEN STUDENTS BY TYPE OF PRE-SCHOOL AND KINDERGARTEN EXPERIMENTAL EXPERIENCE

| Teacher<br>Ratings           | Curriculum Experience |      |    |      |     |     |    |      |    |      |    |      |
|------------------------------|-----------------------|------|----|------|-----|-----|----|------|----|------|----|------|
|                              | I                     |      | II |      | III |     | IV |      | V  |      | VI |      |
|                              | F                     | P    | F  | P    | F   | P   | F  | P    | F  | P    | F  | P    |
| 1 (high)                     | 2                     | 7%   | 0  | 0%   | 1   | 3%  | 0  | 0%   | 1  | 4%   | 1  | 3%   |
| 2                            | 1                     | 3    | 0  | 0    | 2   | 7   | 1  | 3    | 1  | 4    | 0  | 0    |
| 3                            | 2                     | 7    | 3  | 10   | 1   | 3   | 1  | 3    | 1  | 4    | 4  | 14   |
| 4                            | 0                     | 0    | 4  | 13   | 2   | 7   | 2  | 7    | 2  | 7    | 4  | 14   |
| 5                            | 9                     | 30   | 8  | 27   | 8   | 28  | 4  | 13   | 10 | 36   | 11 | 38   |
| 6                            | 2                     | 7    | 4  | 13   | 1   | 3   | 5  | 17   | 2  | 7    | 2  | 7    |
| 7                            | 8                     | 27   | 5  | 17   | 7   | 24  | 8  | 27   | 5  | 18   | 4  | 14   |
| 8                            | 3                     | 10   | 2  | 7    | 3   | 10  | 2  | 7    | 1  | 4    | 0  | 0    |
| 9 (low)                      | 3                     | 10   | 4  | 13   | 4   | 14  | 7  | 23   | 4  | 14   | 3  | 10   |
| Uninterpretable<br>Responses | 0                     | 0    | 0  | 0    | 0   | 0   | 0  | 0    | 1  | 4    | 0  | 0    |
| Total                        | 30                    | 101% | 30 | 100% | 29  | 99% | 30 | 100% | 28 | 102% | 29 | 100% |



TABLE A-5

FREQUENCY AND PERCENTAGE DISTRIBUTION FOR TEACHER RATINGS ON LANGUAGE AND SPEECH PATTERNS FOR  
KINDERGARTEN STUDENTS BY TYPE OF PRE-SCHOOL AND KINDERGARTEN EXPERIMENTAL EXPERIENCE

| Teacher<br>Rating           | Curriculum Experience |      |    |      |     |      |    |     |    |      |    |     |
|-----------------------------|-----------------------|------|----|------|-----|------|----|-----|----|------|----|-----|
|                             | I                     |      | II |      | III |      | IV |     | V  |      | VI |     |
|                             | F                     | P    | F  | P    | F   | P    | F  | P   | F  | P    | F  | P   |
| 1 (high)                    | 0                     | 0%   | 0  | 0%   | 0   | 0%   | 1  | 3%  | 0  | 0%   | 0  | 0%  |
| 2                           | 2                     | 7    | 1  | 3    | 0   | 0    | 0  | 0   | 1  | 4    | 0  | 0   |
| 3                           | 3                     | 10   | 3  | 10   | 6   | 21   | 1  | 3   | 2  | 7    | 3  | 10  |
| 4                           | 3                     | 10   | 2  | 7    | 4   | 14   | 3  | 10  | 5  | 18   | 3  | 10  |
| 5                           | 6                     | 20   | 11 | 37   | 6   | 21   | 10 | 33  | 9  | 32   | 10 | 34  |
| 6                           | 1                     | 3    | 1  | 3    | 0   | 0    | 1  | 3   | 3  | 11   | 6  | 21  |
| 7                           | 3                     | 10   | 6  | 20   | 3   | 10   | 9  | 30  | 4  | 14   | 2  | 7   |
| 8                           | 4                     | 13   | 2  | 7    | 4   | 14   | 4  | 13  | 2  | 7    | 3  | 10  |
| 9 (low)                     | 8                     | 27   | 4  | 13   | 6   | 21   | 1  | 3   | 2  | 7    | 2  | 7   |
| Uninterpretable<br>Response | 0                     | 0    | 0  | 0    | 0   | 0    | 0  | 0   | 0  | 0    | 0  | 0   |
| Total                       | 30                    | 100% | 30 | 100% | 29  | 101% | 30 | 98% | 28 | 100% | 29 | 99% |

Table A-6

FREQUENCY AND PERCENTAGE DISTRIBUTION FOR TEACHER RATINGS ON SOCIAL BEHAVIOR FOR KINDERGARTEN  
STUDENTS BY TYPE OF PRE-SCHOOL AND KINDERGARTEN EXPERIMENTAL EXPERIENCE

| Teacher<br>Rating            | Curriculum Experience |      |    |     |     |     |    |      |    |      |    |      |
|------------------------------|-----------------------|------|----|-----|-----|-----|----|------|----|------|----|------|
|                              | I                     |      | II |     | III |     | IV |      | V  |      | VI |      |
|                              | F                     | P    | F  | P   | F   | P   | F  | P    | F  | P    | F  | P    |
| 1 (low)                      | 2                     | 7%   | 0  | 0%  | 1   | 3%  | 1  | 3%   | 0  | 0%   | 0  | 0%   |
| 2                            | 1                     | 3    | 0  | 0   | 1   | 3   | 0  | 0    | 3  | 11   | 0  | 0    |
| 3                            | 0                     | 0    | 0  | 0   | 1   | 3   | 1  | 3    | 0  | 0    | 0  | 0    |
| 4                            | 0                     | 0    | 7  | 23  | 3   | 10  | 0  | 0    | 4  | 14   | 9  | 31   |
| 5                            | 6                     | 20   | 3  | 10  | 3   | 10  | 3  | 10   | 6  | 21   | 9  | 31   |
| 6                            | 2                     | 7    | 6  | 20  | 0   | 0   | 3  | 10   | 3  | 11   | 6  | 21   |
| 7                            | 7                     | 23   | 6  | 20  | 5   | 17  | 5  | 17   | 5  | 18   | 4  | 14   |
| 8                            | 6                     | 20   | 4  | 13  | 5   | 17  | 9  | 30   | 2  | 7    | 1  | 3    |
| 9 (high)                     | 6                     | 20   | 4  | 13  | 10  | 34  | 8  | 27   | 5  | 18   | 0  | 0    |
| Uninterpretable<br>Responses | 0                     | 0    | 0  | 0   | 0   | 0   | 0  | 0    | 0  | 0    | 0  | 0    |
| Total                        | 30                    | 100% | 30 | 99% | 29  | 97% | 30 | 100% | 28 | 100% | 29 | 100% |

TABLE A-7

FREQUENCY AND PERCENTAGE DISTRIBUTION FOR TEACHER RATINGS ON REALITY ORIENTATION FOR  
KINDERGARTEN STUDENTS BY TYPE OF PRE-SCHOOL AND KINDERGARTEN EXPERIMENTAL EXPERIENCE

| Teacher<br>Rating           | Curriculum Experience |      |    |      |     |      |    |      |    |      |    |      |
|-----------------------------|-----------------------|------|----|------|-----|------|----|------|----|------|----|------|
|                             | I                     |      | II |      | III |      | IV |      | V  |      | VI |      |
|                             | F                     | P    | F  | P    | F   | P    | F  | P    | F  | P    | F  | P    |
| 1 (low)                     | 2                     | 7%   | 0  | 0%   | 0   | 0%   | 1  | 3%   | 2  | 7%   | 0  | 0%   |
| 2                           | 2                     | 7    | 0  | 0    | 0   | 0    | 0  | 0    | 0  | 0    | 0  | 0    |
| 3                           | 1                     | 3    | 1  | 3    | 2   | 7    | 0  | 0    | 1  | 4    | 4  | 14   |
| 4                           | 0                     | 0    | 5  | 17   | 3   | 10   | 2  | 7    | 5  | 18   | 7  | 24   |
| 5                           | 10                    | 33   | 10 | 33   | 7   | 24   | 6  | 20   | 7  | 25   | 8  | 28   |
| 6                           | 2                     | 7    | 2  | 7    | 3   | 10   | 1  | 3    | 4  | 14   | 7  | 24   |
| 7                           | 10                    | 33   | 6  | 20   | 8   | 28   | 12 | 40   | 2  | 7    | 0  | 0    |
| 8                           | 1                     | 3    | 3  | 10   | 4   | 14   | 2  | 7    | 3  | 11   | 2  | 7    |
| 9 (high)                    | 2                     | 7    | 3  | 10   | 2   | 7    | 6  | 20   | 4  | 14   | 1  | 3    |
| Uninterpretable<br>Response | 0                     | 0    | 0  | 0    | 0   | 0    | 0  | 0    | 0  | 0    | 0  | 0    |
| Total                       | 30                    | 100% | 30 | 100% | 29  | 100% | 30 | 100% | 28 | 100% | 29 | 100% |





**TABLE A-2. CORRELATION MATRIX ASYMMETRY VARIABLES: CONTROL/REGULAR KIMBERLY-CARTEX SAMPLE (N=29)**

[illegible]

**TABLE A-10. CORRELATION MATRIX, ADJUSTMENT VARIABLES: BEREITER-ENGELMANN PRESCHOOL/REGULAR KINDERCARTEN SAMPLE (N=30)**

[illegible]



TABLE A-11. CORRELATION MATRIX, ADJUSTMENT VARIABLES: CONTROL/BEREITER-  
ENGLEMANN KINDERGARTEN SAMPLE (N=29)

| Variables                               | 1  | 2 | 3  | 4  | 5  | 6  | 7  | 8   | 9  | 10 | 11 | 12  | 13 |
|-----------------------------------------|----|---|----|----|----|----|----|-----|----|----|----|-----|----|
| <u>Teacher Ratings of Adjustment</u>    |    |   |    |    |    |    |    |     |    |    |    |     |    |
| Reality                                 | 1  | - | 74 | 54 | 65 | 00 | 00 | -22 | 00 | 00 | 00 | -10 | 00 |
| Social Behavior                         | 2  |   | -  | 60 | 65 | 00 | 00 | -17 | 00 | 00 | 00 | -09 | 00 |
| Work Habits                             | 3  |   |    | -  | 70 | 00 | 00 | -10 | 00 | 00 | 00 | -18 | 00 |
| Temperament                             | 4  |   |    |    | -  | 00 | 00 | 09  | 00 | 00 | 00 | -17 | 00 |
| <u>Behavioral Indices of Adjustment</u> |    |   |    |    |    |    |    |     |    |    |    |     |    |
| Bedwetting                              | 5  |   |    |    | -  | 00 | 00 | 00  | 00 | 00 | 00 | 00  | 00 |
| Insomnia                                | 6  |   |    |    |    | -  | 00 | 00  | 00 | 00 | 00 | 00  | 00 |
| Finger Sucking                          | 7  |   |    |    |    |    | -  | 00  | 00 | 00 | 00 | -04 | 00 |
| Nail Biting                             | 8  |   |    |    |    |    |    | -   | 00 | 00 | 00 | 00  | 00 |
| Nervousness                             | 9  |   |    |    |    |    |    |     | -  | 00 | 00 | 00  | 00 |
| Crying                                  | 10 |   |    |    |    |    |    |     |    | -  | 00 | 00  | 00 |
| Poor Eating                             | 11 |   |    |    |    |    |    |     |    |    | -  | 00  | 00 |
| Speech Problems                         | 12 |   |    |    |    |    |    |     |    |    |    | -   | 00 |
| Bad Temper                              | 13 |   |    |    |    |    |    |     |    |    |    |     | -  |

TABLE A-12. CORRELATION MATRIX, ADJUSTMENT VARIABLES: PRESCHOOL  
ENRICHMENT/BEREITER-ENGLEMANN KINDERGARTEN SAMPLE (N=30)

| Variables                               | 1  | 2 | 3  | 4  | 5  | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  |     |
|-----------------------------------------|----|---|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <u>Teacher Ratings of Adjustment</u>    |    |   |    |    |    |     |     |     |     |     |     |     |     |     |
| Reality                                 | 1  | - | 79 | 73 | 76 | 12  | 33  | -12 | 00  | 31  | 33  | -23 | -01 | 25  |
| Social Behavior                         | 2  | - | 75 | 82 | 26 | 25  | 08  | 00  | 28  | 25  | 25  | -19 | 05  | 19  |
| Work Habits                             | 3  | - | -  | 78 | 10 | -01 | -01 | 00  | 05  | -01 | -22 | -09 | -09 | 22  |
| Temperament                             | 4  | - | -  | -  | 16 | 24  | -10 | 00  | 27  | 24  | -22 | 02  | 23  | 23  |
| <u>Behavioral Indices of Adjustment</u> |    |   |    |    |    |     |     |     |     |     |     |     |     |     |
| Bed Wetting                             | 5  | - | -  | -  | -  | -06 | -06 | 00  | -09 | -06 | -06 | -09 | -11 | -11 |
| Insomnia                                | 6  | - | -  | -  | -  | -   | -03 | 00  | 69  | 100 | -03 | -05 | -06 | -06 |
| Finger Sucking                          | 7  | - | -  | -  | -  | -   | -   | 00  | -05 | -03 | -03 | -05 | -06 | -06 |
| Nail Biting                             | 8  | - | -  | -  | -  | -   | -   | -   | 00  | 00  | 00  | 00  | 00  | 00  |
| Nervousness                             | 9  | - | -  | -  | -  | -   | -   | -   | -   | 69  | -05 | -07 | 36  | 36  |
| Crying                                  | 10 | - | -  | -  | -  | -   | -   | -   | -   | -   | -03 | -05 | -06 | -06 |
| Poor Eating                             | 11 | - | -  | -  | -  | -   | -   | -   | -   | -   | -   | 69  | -06 | -06 |
| Speech Problems                         | 12 | - | -  | -  | -  | -   | -   | -   | -   | -   | -   | -   | -   | -09 |
| Bad Temper                              | 13 | - | -  | -  | -  | -   | -   | -   | -   | -   | -   | -   | -   | -   |

TABLE A-13. CORRELATION MATRIX, ADJUSTMENT VARIABLES: BEREITER-ENGLEMAN  
PRESCHOOL/BEREITER ENGLEMAN KINDERGARTEN SAMPLE (N=30)

| Variables                               | 1 | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  |
|-----------------------------------------|---|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <u>Teacher Ratings of Adjustment</u>    |   |    |    |    |     |     |     |     |     |     |     |     |     |
| Reality                                 | - | 76 | 51 | 54 | -06 | 01  | -13 | -23 | -13 | 41  | 01  | -19 | 33  |
| Social Behavior                         |   | -  | 61 | 64 | -11 | -11 | 05  | -12 | -04 | 47  | 01  | 01  | 43  |
| Work Habits                             |   |    | -  | 81 | 01  | 04  | 05  | 23  | -11 | 28  | -15 | -04 | 29  |
| Temperament                             |   |    |    | -  | -15 | -04 | -10 | 23  | 05  | 36  | 07  | -04 | 29  |
| <u>Behavioral Indices of Adjustment</u> |   |    |    |    |     |     |     |     |     |     |     |     |     |
| Bed Wetting                             |   |    |    |    | -   | -07 | -05 | -09 | -05 | -05 | -07 | -07 | -07 |
| Insomnia                                |   |    |    |    |     | -   | -05 | -09 | -05 | -05 | 46  | -07 | -07 |
| Finger Sucking                          |   |    |    |    |     |     | -   | 56  | -03 | -03 | -05 | 69  | -05 |
| Nail Biting                             |   |    |    |    |     |     |     | -   | 56  | -06 | -09 | 36  | -09 |
| Nervousness                             |   |    |    |    |     |     |     |     | -   | -03 | -05 | -05 | -05 |
| Crying                                  |   |    |    |    |     |     |     |     |     | -   | -05 | -05 | -05 |
| Poor Eating                             |   |    |    |    |     |     |     |     |     |     | -   | -07 | -07 |
| Speech Problems                         |   |    |    |    |     |     |     |     |     |     |     | -   | -07 |
| Bad Temper                              |   |    |    |    |     |     |     |     |     |     |     |     | -   |



**TABLE A-14 CORRELATION MATRIX AND ACADEMIC ACHIEVEMENT  
VARIABLES: ENRICHMENT PRESCHOOL/REGULAR  
KINDERGARTEN SAMPLE (N=28)**

| Variables                         |   | 1 | 2  | 3  | 4  | 5  | 6  | 7  |
|-----------------------------------|---|---|----|----|----|----|----|----|
| Total I.Q., <u>Stanford-Binet</u> | 1 | - | 72 | 68 | 52 | 48 | 36 | 37 |
| Vocabulary, I.Q., Subtest         | 2 |   | -  | 45 | 30 | 26 | 09 | 21 |
| Numbers, I.Q., Subtest            | 3 |   |    | -  | 35 | 39 | 50 | 34 |
| Reading, <u>WRAT</u>              | 4 |   |    |    | -  | 39 | 65 | 23 |
| Spelling, <u>WRAT</u>             | 5 |   |    |    |    | -  | 60 | 52 |
| Arithmetic, <u>WRAT</u>           | 6 |   |    |    |    |    | -  | 35 |
| Language and Speech Skills        | 7 |   |    |    |    |    |    | -  |

**TABLE A-15 CORRELATION MATRIX AND ACADEMIC ACHIEVEMENT VARIABLES:  
CONTROL/REGULAR KINDERGARTEN SAMPLES  
(N=29)**

| Variables                         |   | 1 | 2  | 3   | 4   | 5   | 6   | 7   |
|-----------------------------------|---|---|----|-----|-----|-----|-----|-----|
| Total I.Q., <u>Stanford-Binet</u> | 1 | - | 15 | -06 | 46  | 47  | 28  | -09 |
| Vocabulary, I.Q. Subtest          | 2 |   | -  | 05  | -09 | -04 | -28 | -05 |
| Numbers, I.Q. Subtest             | 3 |   |    | -   | 07  | 17  | 26  | 29  |
| Reading, <u>WRAT</u>              | 4 |   |    |     | -   | 44  | 60  | 12  |
| Spelling, <u>WRAT</u>             | 5 |   |    |     |     | -   | 23  | 24  |
| Arithmetic, <u>WRAT</u>           | 6 |   |    |     |     |     | -   | 28  |
| Language and Speech Skills        | 7 |   |    |     |     |     |     | -   |

**TABLE A-16** CORRELATION MATRIX AND ACADEMIC ACHIEVEMENT VARIABLES:  
BEREITER-ENGELMANN PRESCHOOL/REGULAR KINDERGARTEN  
SAMPLE (N=30)

| Variables                         |   | 1 | 2  | 3  | 4  | 5  | 6  | 7  |
|-----------------------------------|---|---|----|----|----|----|----|----|
| Total I.Q., <u>Stanford-Binet</u> | 1 | - | 40 | 45 | 40 | 32 | 45 | 21 |
| Vocabulary, I.Q. Subtest          | 2 |   | -  | 22 | 60 | 14 | 57 | 11 |
| Numbers, I.Q. Subtest             | 3 |   |    | -  | 34 | 30 | 46 | 25 |
| Reading, <u>WRAT</u>              | 4 |   |    |    | -  | 55 | 78 | 37 |
| Spelling, <u>WRAT</u>             | 5 |   |    |    |    | -  | 59 | 28 |
| Arithmetic, <u>WRAT</u>           | 6 |   |    |    |    |    | -  | 31 |
| Language and Speech Skills        | 7 |   |    |    |    |    |    | -  |

**TABLE A-17** CORRELATION MATRIX AND ACADEMIC ACHIEVEMENT VARIABLES:  
CONTROL/BEREITER-ENGELMANN KINDERGARTEN SAMPLE (N=29)

| Variables                         |   | 1 | 2  | 3  | 4  | 5  | 6   | 7   |
|-----------------------------------|---|---|----|----|----|----|-----|-----|
| Total I.Q., <u>Stanford-Binet</u> | 1 | - | 55 | 31 | 74 | 59 | 50  | 05  |
| Vocabulary, I.Q. Subtest          | 2 |   | -  | 30 | 53 | 42 | 20  | 26  |
| Numbers, I.Q. Subtest             | 3 |   |    | -  | 10 | 06 | -10 | -01 |
| Reading, <u>WRAT</u>              | 4 |   |    |    | -  | 75 | 62  | 24  |
| Spelling, <u>WRAT</u>             | 5 |   |    |    |    | -  | 72  | 14  |
| Arithmetic, <u>WRAT</u>           | 6 |   |    |    |    |    | -   | 19  |
| Language and Speech Skills        | 7 |   |    |    |    |    |     | -   |

**TABLE A-18 CORRELATION MATRIX AND ACADEMIC ACHIEVEMENT VARIABLES:  
PRESCHOOL ENRICHMENT/BEREITER-ENGELMANN KINDERGARTEN  
SAMPLE (N=30)**

| Variables                         |   | 1 | 2  | 3  | 4  | 5  | 6  | 7  |
|-----------------------------------|---|---|----|----|----|----|----|----|
| Total I.Q., <u>Stanford-Binet</u> | 1 | - | 49 | 29 | 65 | 25 | 52 | 59 |
| Vocabulary, I.Q. Subtest          | 2 |   | -  | 14 | 17 | 30 | 10 | 30 |
| Numbers, I.Q. Subtest             | 3 |   |    | -  | 25 | 30 | 63 | 62 |
| Reading, <u>WRAT</u>              | 4 |   |    |    | -  | 25 | 60 | 55 |
| Spelling, <u>WRAT</u>             | 5 |   |    |    |    | -  | 29 | 54 |
| Arithmetic, <u>WRAT</u>           | 6 |   |    |    |    |    | -  | 77 |
| Language & Speech Skills          | 7 |   |    |    |    |    |    | -  |

**TABLE A-19 CORRELATION MATRIX AND ACADEMIC ACHIEVEMENT VARIABLES:  
BEREITER-ENGELMANN PRESCHOOL/BEREITER-ENGELMANN KINDER-  
GARTEN SAMPLE (N=30)**

| Variables                         |   | 1 | 2  | 3  | 4  | 5  | 6   | 7   |
|-----------------------------------|---|---|----|----|----|----|-----|-----|
| Total I.Q., <u>Stanford-Binet</u> | 1 | - | 46 | 32 | 52 | 31 | 48  | 31  |
| Vocabulary, I.Q. Subtest          | 2 |   | -  | 29 | 52 | 08 | -16 | 22  |
| Numbers, I.Q. Subtest             | 3 |   |    | -  | 21 | 44 | -04 | 29  |
| Reading, <u>WRAT</u>              | 4 |   |    |    | -  | 40 | 33  | -00 |
| Spelling, <u>WRAT</u>             | 5 |   |    |    |    | -  | 21  | 15  |
| Arithmetic, <u>WRAT</u>           |   |   |    |    |    |    | -   | -13 |
| Language & Speech Skills          | 7 |   |    |    |    |    |     | -   |



TABLE A-20

MODELS, F-TESTS, R AND  $R^2$  FOR THE PREDICTION  
OF READING SKILLS (WIDE RANGE)

| Predictors                                     | Model      | R   | $R^2$ | df    | F    | p   |
|------------------------------------------------|------------|-----|-------|-------|------|-----|
| Type of Kindergarten                           | Full       | .14 | .02   |       |      |     |
|                                                | Restricted | .00 | .00   | 1/174 | 3.28 | .07 |
| Type of Preschool                              | Full       | .17 | .03   |       |      |     |
|                                                | Restricted | .00 | .00   | 2/173 | 2.56 | .08 |
| Interaction Between Preschool and Kindergarten | Full       | .23 | .054  |       |      |     |
|                                                | Restricted | .21 | .047  | 2/170 | 0.64 | .53 |

TABLE A-21

MODELS, F-TESTS, R AND  $R^2$  FOR THE  
PREDICTION OF SPELLING SKILLS (WIDE RANGE)

| Predictors                                     | Model      | R   | $R^2$ | df    | F    | p   |
|------------------------------------------------|------------|-----|-------|-------|------|-----|
| Type of Kindergarten                           | Full       | .14 | .02   |       |      |     |
|                                                | Restricted | .00 | .00   | 1/174 | 2.92 | .09 |
| Type of Preschool                              | Full       | .17 | .03   |       |      |     |
|                                                | Restricted | .00 | .00   | 2/173 | 2.63 | .07 |
| Interaction Between Preschool and Kindergarten | Full       | .26 | .07   |       |      |     |
|                                                | Restricted | .23 | .05   | 2/170 | 2.27 | .11 |

TABLE A-22

MODELS, F-TESTS, R AND R<sup>2</sup> FOR THE PREDICTION  
OF ARITHMETIC SKILLS (WIDE RANGE)

| Predictors                                     | Model      | R   | R <sup>2</sup> | df    | F     | p    |
|------------------------------------------------|------------|-----|----------------|-------|-------|------|
| Type of Kindergarten                           | Full       | .17 | .03            |       |       |      |
|                                                | Restricted | .00 | .00            | 2/173 | 2.43  | .09  |
| Type of Preschool                              | Full       | .24 | .06            |       |       |      |
|                                                | Restricted | .00 | .00            | 1/174 | 11.37 | .001 |
| Interaction Between Preschool and Kindergarten | Full       | .33 | .11            |       |       |      |
|                                                | Restricted | .30 | .09            | 2/170 | 1.94  | .15  |

**TABLE A-23**

**FREQUENCY AND PERCENTAGE DISTRIBUTIONS OF OBSERVED  
BEHAVIORAL DEVIANCES OF STUDENTS CATEGORIZED BY TYPE OF  
KINDERGARTEN PROGRAM AND PRESCHOOL TREATMENT CONDITION**

|                              |  | Type of Preschool Treatment  |    |                      |    |                   |    |
|------------------------------|--|------------------------------|----|----------------------|----|-------------------|----|
|                              |  | Bereiter-Engelmann<br>(N=29) |    | Enrichment<br>(N=30) |    | Control<br>(N=18) |    |
|                              |  | f                            | %  | f                    | %  | f                 | %  |
| <b>A. Bereiter-Engelmann</b> |  |                              |    |                      |    |                   |    |
| Kindergarten:                |  |                              |    |                      |    |                   |    |
| 1. Touching others           |  | 10                           | 34 | 14                   | 47 | 3                 | 17 |
| 2. Talking to teachers       |  | 13                           | 45 | 14                   | 47 | 7                 | 39 |
| 3. Touching self             |  | 14                           | 48 | 11                   | 37 | 6                 | 33 |
| 4. Talking to others         |  | 17                           | 59 | 11                   | 37 | 8                 | 44 |
| 5. Striking others           |  | 12                           | 41 | 10                   | 34 | 6                 | 33 |
| 6. Leaving assigned area     |  | 7                            | 24 | 9                    | 30 | 6                 | 33 |
| 7. Other locomotive movement |  | 9                            | 31 | 9                    | 30 | 4                 | 22 |
| <b>B. Regular Enrichment</b> |  |                              |    |                      |    |                   |    |
| Kindergarten                 |  | (N=28)                       |    | (N=19)               |    | (N=18)            |    |
| 1. Touching others           |  | 17                           | 49 | 10                   | 53 | 6                 | 33 |
| 2. Talking to teachers       |  | 7                            | 25 | 17                   | 37 | 5                 | 28 |
| 3. Touching self             |  | 4                            | 14 | 5                    | 26 | 1                 | 6  |
| 4. Talking to others         |  | 11                           | 39 | 11                   | 68 | 10                | 56 |
| 5. Striking others           |  | 4                            | 14 | 6                    | 32 | 2                 | 11 |
| 6. Leaving assigned area     |  | 11                           | 39 | 4                    | 21 | 4                 | 22 |
| 7. Other locomotive movement |  | 11                           | 39 | 12                   | 63 | 6                 | 33 |



[illegible]

4. The fourth part of the document discusses the implications of the results and the conclusions drawn from the study. It highlights the significance of the findings and their potential applications.

5. The fifth part of the document provides a summary of the key points discussed throughout the document. It reiterates the main findings and the conclusions drawn.

6. The sixth part of the document includes a list of references to the sources used in the study. It provides a comprehensive overview of the literature related to the topic.

7. The seventh part of the document contains a list of figures and tables, providing a visual representation of the data and results.

8. The eighth part of the document includes a list of appendices, providing additional information and data that support the main findings of the study.

9. The ninth part of the document contains a list of footnotes, providing further details and clarifications on specific points mentioned in the text.

10. The tenth part of the document includes a list of acknowledgments, thanking the individuals and organizations that provided support and assistance during the study.

11. The eleventh part of the document contains a list of references, providing a comprehensive overview of the literature related to the topic.

12. The twelfth part of the document includes a list of figures and tables, providing a visual representation of the data and results.

13. The thirteenth part of the document contains a list of appendices, providing additional information and data that support the main findings of the study.

14. The fourteenth part of the document includes a list of footnotes, providing further details and clarifications on specific points mentioned in the text.

15. The fifteenth part of the document contains a list of acknowledgments, thanking the individuals and organizations that provided support and assistance during the study.

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## APPENDIX B

### EXHIBITS

## Appendix B<sub>1</sub>

### DEVELOPMENTAL PROFILE

#### Teacher Ratings

Through past experience, it has been found that, while it is possible to test children of this age, the "NORMAL" range of test results is so wide as to raise serious questions as to the usefulness of the test score. It, therefore, seems advisable to provide a different basis for assessing the strengths of four and five year old children, particularly those children with whom we are presently dealing.

The DEVELOPMENTAL PROFILE is intended to be a descriptive device upon which a picture of each child's relative strengths and weaknesses can be profiled in terms of demonstrated behavior, and compared against a model in terms of "NORMAL" or "AVERAGE" children of this age, presumably falling somewhere down the middle of each of the seven categories.



Child's Name \_\_\_\_\_  
 Birthdate \_\_\_\_\_  
 School \_\_\_\_\_

DETROIT SCHOOLS PSYCHOLOGICAL CLINIC  
 DEVELOPMENTAL PROFILE

REALITY ORIENTATION

|                                      |                      |   |                            |   |                      |   |                   |   |
|--------------------------------------|----------------------|---|----------------------------|---|----------------------|---|-------------------|---|
| X                                    | X                    | X | X                          | X | X                    | X | X                 | X |
| INDEPENDENT<br>SELF DISCI-<br>PLINED | GOOD<br>SELF-CONCEPT |   | ADEQUATE<br>WITH POTENTIAL |   | POOR<br>SELF-CONCEPT |   | OUT OF<br>CONTACT |   |

SOCIAL BEHAVIOR

|                         |           |   |           |   |           |   |                                       |   |
|-------------------------|-----------|---|-----------|---|-----------|---|---------------------------------------|---|
| X                       | X         | X | X         | X | X         | X | X                                     | X |
| OUTGOING<br>COOPERATIVE | ACCEPTING |   | TRACTABLE |   | REJECTING |   | SEVERLY<br>AGGRESSIVE OR<br>WITHDRAWN |   |

LANGUAGE AND SPEECH PATTERNS

|                              |                             |   |                                                   |   |                                     |   |                            |   |
|------------------------------|-----------------------------|---|---------------------------------------------------|---|-------------------------------------|---|----------------------------|---|
| X                            | X                           | X | X                                                 | X | X                                   | X | X                          | X |
| SPONTANEOUS<br>COMMUNICATION | COMMUNICATIVE<br>RESPONDING |   | EXPRESSIVE AND<br>UNDERSTANDING<br>LANGUAGE USAGE |   | IMMATURE<br>LANGUAGE<br>DEVELOPMENT |   | NO LANGUAGE<br>DEVELOPMENT |   |

WORK HABITS

|                            |                                            |   |                                 |   |                              |   |           |   |
|----------------------------|--------------------------------------------|---|---------------------------------|---|------------------------------|---|-----------|---|
| X                          | X                                          | X | X                               | X | X                            | X | X         | X |
| WORK OF<br>GOOD<br>QUALITY | EFFECTIVE WORK<br>WITH MINIMAL<br>GUIDANCE |   | EFFECTIVE WORK<br>WITH GUIDANCE |   | WORK REQUIRES<br>SUPERVISION |   | DEPENDENT |   |

TEMPERMENT

|                                             |                                               |   |                          |   |                                                      |   |                               |   |
|---------------------------------------------|-----------------------------------------------|---|--------------------------|---|------------------------------------------------------|---|-------------------------------|---|
| X                                           | X                                             | X | X                        | X | X                                                    | X | X                             | X |
| HAPPY RES-<br>PONSIVE<br>EVEN TEM-<br>PERED | GENERALLY HAPPY<br>TOLERANT OF<br>Frustration |   | ENVIRONMENT-<br>ORIENTED |   | GENERALLY<br>UNHAPPY-LOW<br>Frustration<br>TOLERANCE |   | EXTREME<br>CHANCES IN<br>MOOD |   |

HEALTH AND PHYSICAL DEVELOPMENT

|                                              |                                                         |   |                                             |   |                                     |   |                                        |   |
|----------------------------------------------|---------------------------------------------------------|---|---------------------------------------------|---|-------------------------------------|---|----------------------------------------|---|
| X                                            | X                                                       | X | X                                           | X | X                                   | X | X                                      | X |
| GOOD HEALTH<br>SUPERIOR PHYS.<br>DEVELOPMENT | GOOD HEALTH<br>ABOVE AVERAGE<br>PHYSICAL<br>DEVELOPMENT |   | GOOD HEALTH<br>AVERAGE PHYS.<br>DEVELOPMENT |   | ATYPICAL<br>PHYSICAL<br>DEVELOPMENT |   | POOR<br>HEALTH<br>DIAGNOSED<br>PROBLEM |   |

NOTE

|                                     |                      |   |        |   |                                             |   |                                           |   |
|-------------------------------------|----------------------|---|--------|---|---------------------------------------------|---|-------------------------------------------|---|
| X                                   | X                    | X | X      | X | X                                           | X | X                                         | X |
| SUPPORTING<br>GROWTH PRO-<br>MOTING | SUPPORTING<br>GROWTH |   | NORMAL |   | WEIGHT<br>IMPAIRING<br>GROWTH<br>INHIBITING |   | NONSUPPORTIVE<br>UNFAVORABLE<br>TO GROWTH |   |

DETROIT SCHOOLS PSYCHOLOGICAL CLINIC

Head Start Profile

Reality Orientation

Independent;  
Self-Disciplined

Demonstrates reasonable ability to resolve environmental press situations independently and effectively  
Exhibits a degree of future orientation the relationship of now to future events  
Shows an "I am what I am and I find it good" attitude of self  
Has adopted and accepted characteristics appropriate to an individual of that sex

Good Concept  
of Self

Attempts most activities with an "I can" attitude  
Reacts to environmental press with age-appropriate behavior  
Shows positive self-regard: a good evaluation of self  
Has adopted characteristics appropriate to an individual of that sex

Adequate with  
Potential for  
Development

Attempts most activities with an "I think I can" attitude  
Acts purposefully in response to environmental press (not necessarily effectively)  
Shows the beginnings of self-regard: generally good evaluation of self  
Generally accepts appropriate male-female characteristics and demonstrates the adaptation of appropriate characteristics

Poor Concept of  
Self

Expresses an "I can" attitude to activities; may or may not attempt  
Reacts to environmental press with age-inappropriate behaviors; rigid patterns of responding  
Has low self-esteem; expresses a feeling of being bad or of low worth most of the time  
Generally rejects appropriate male-female characteristics; shows confusion in behavioral role

Out of  
Contact

Reacts to environmental press by withdrawal, self-punishment, fantasy or physical sickness; shows maladaptive behaviors; aggression against self or others  
Demonstrates an inability to see cause-effect relationships; has frozen patterns of responding  
Openly rejects characteristics appropriate to an individual of that sex

## Social Behavior

### Outgoing; Cooperative

Seeks and is sought by peers for group activities  
Initiates polite contacts with unfamiliar adults  
and peer in group activities

### Accepting

Is accepting and acceptable to peers  
Responds to group activities and contacts with  
unfamiliar adults and peers, but will not initiate  
contact  
Generally shares with others  
Reasonably responsive and sensitive to the feelings  
of others

### Tractable

Involvement in group activities usually requires  
reinforcement  
Usually responds to group activities, adults and  
peers with teacher's encouragement  
Shares with others when encouraged to do so

### Rejecting

Generally rejects group activities even when accepted  
or sought by peers  
Needs much reinforcement to respond minimally to  
group activities, unfamiliar adults and peers  
Does not share possessions, materials or equipment  
Shows little response to emotional tone from others

### Severely Aggressive or Withdrawn

Interrupts or overpowers others to disrupt group  
activities  
Withdraws when confronted with unfamiliar social  
situations  
Takes materials when in use by others or allows  
others to remove materials with which he is working  
Social interactions yield rejecting responses

## Work Habits

### Independent Work of Good Quality

Completes assignments promptly and is able to enlarge  
creatively upon an assignment  
Demonstrates a high degree of self-motivation  
Shows well-developed, controlled attention

### Effective Work with Minimal Guidance

Shows initiative in carrying out assignments  
Completes most assignments; controlled attention  
Works well with minimal guidance  
Takes pride in work; work executed with care



Effective Work  
with Guidance

Shows an attention span sufficient for effective work  
Works best (a) in structured situation (b) with some  
prompting  
Exhibits pride in workmanship at times

Work requires  
Supervision

Shows short attention span, uneven willingness to  
attend  
Requires constant supervision in order to complete  
even short assigned tasks  
Work reflects little care in execution

Dependent

Is unable or unwilling to attend  
May attempt a part of assignment if directly supervised  
What is done shows lack of concern for quality

Language and Speech Patterns

Spontaneous

Initiates conversation and volunteers additional  
information  
Mature and superior vocabulary development  
Makes descriptive use of language by elaboration  
and fluency  
Demonstrates ability to grasp abstract meanings from  
verbal communication

Communicative  
Responding

Responds easily and volunteers additional information  
Vocabulary at or within a year beyond age level  
Good sentence structure shows ability to express  
ideas with clarity  
Demonstrates ability to grasp and describe complex  
details verbally

Expressive and  
Understanding  
Language Usage

May respond to questions or may volunteer information  
Vocabulary at age-appropriate levels  
Usually able to communicate needs, desires and ideas  
with few structural gaps

Immature Language  
Development

Responds to direct questions only with much encouragement  
Deficient vocabulary  
Uses fragmented sentences with word gaps, logic leaps  
and some distortions  
Uses gestures or acts out rather than using verbal  
expressions

Little or No  
Language  
Development

Little or no response to direct questions  
Vocabulary is deficient, shows personal not logical  
referents  
Is largely dependent on non-verbal communications to  
express needs and desires

## Health and Physical Development

### Good Health;

#### Superior Physical Condition and Development

In appearance is the the picture of health; rarely encounters a health problem of any kind  
Demonstrates physical skills beyond expected levels for age with appropriate high activity and energy levels

Sensory modalities are finely tuned for age levels

### Good Health;

#### Above Average Physical Condition and Development

Typically has the appearance of good health lacking obvious physical defects

Good health record: recovery from communicable diseases...

Engages in sustained physical activities with good energy levels display

Above average physical coordination and sensory modality development and functioning

### Good Health;

#### Average Physical Condition and Development

Generally has the appearance of good health; no apparent specific disabilities; no apparent physical or sensory handicaps

Typical health record with some sicknesses, injuries, corrected defects

Physical coordination and sensory modalities developed to the point of smooth age level functioning

Good activity and energy levels

#### Atypical Health and Physical Development

Physical appearance marred by health or physical problem; may have glandular or nutritional difficulties

Physical development apparently presents smooth coordination, and good physique

Energy and activity levels reduced by health and physical condition or specific disability

### Poor Health

#### Diagnosed Physical Problem

Physical appearance is one of poor health

Extremely poor health record: diagnosed physical problems; presently under intensive medical care--long term sicknesses; marked vulnerability to a host of physical problems; usually has physical complaints

Arrested development in motor coordination, physique; very poor energy and activity levels

Sensory modalities impaired despite correction

## Temperament

### Happy;

### Responsive;

### Even-Tempered

Positive emotional tone  
Flexible in responding  
Good impulse control  
Good acceptance of situational limits

### Generally Happy;

### Tolerant of

### Frustration

Generally positive emotional tone  
Usually accepting of situational limits  
Can and usually does delay need and impulse gratification

### Environment-

### Oriented

Emotional responding is structured by the environment  
Is generally flexible in emotional responding  
Accepts help in frustrating situations

### Generally Unhappy;

### Low Frustration

### Tolerance

Generally negative emotional tone  
Usually does not show patience in gratifying needs  
Shows tensional behavior; easily frightened; distractible, hyperactive; nervous mannerisms; chronic state of anger and anxiety

### Extreme Changes

### in Mood

Has marked mood swings  
Displays excessive reactions; marked need for loving, mourning; deeply depressed; chronic crying; unmanageable hates  
Engages in obsessional rituals; rocking, clamping, grinding teeth, self-abuse  
Reacts to frustrations with marked temper tantrums, aggressive behaviors  
Is severely withdrawn, unresponsive or silent

## Home

### Supporting;

### Growth-Promoting

Warm and loving attention to children  
Promotes independence, autonomy appropriate to age, sex, and abilities of children; good interactions  
Gives strong reinforcement for achievement; uses symbolic reward and punishment  
Provides an enriched environment structured for self-motivation with suitable materials  
Assists with problems if help is sought or in the best interests of the child

### Supporting;

### Demanding

Above average and considerate attention to children  
Demands good performance by setting up standards, imposing regulations, and by strong reinforcement of high achievement



Provides an environment enriched for achievement;  
books, objects, explorations and community trips;  
good parent-child communications and interactions  
Expects busy, useful activities and makes plans and  
programs  
Provides ready-made solutions for problem situations

Normal

Adequate physical environment with attention to and  
care of physical, emotional and social needs  
Establishes and enforces reasonable rules; provides  
rewards and encouragement for achievement  
Provisions for children are in the general scheme  
of things  
Family organization is stable with good parent-child  
relations and adequate child supervision; good  
communications

Mildly Impairing;  
Growth-Inhibiting

Less than adequate physical environment and attention  
to care of physical, emotional and social needs  
Has inconsistent rules and enforcement; poor parent-  
child relations, interactions; uses direct-object  
rewards and punishments  
Is highly intrusive, protective; promotes dependency;  
discourages exploratory activities  
Insists on obedience in most situations

Non-supporting  
Unfavorable to  
Growth

Inadequate physical environment with minimum attention  
to care of physical, emotional, and special needs  
Incomplete or unstable family organization; emotional  
pathology may be present in the home; little or no  
supervision of children  
Very poor parent-child interactions: communications  
in personal language; hostility, rejection or  
ridicule present  
Regulations established to prevent intrusion from  
children; obedience demanded or considerable  
neglect, avoidance

Appendix B<sub>2</sub>

BOARD OF EDUCATION  
Grand Rapids, Michigan

SCHOOL HEALTH SERVICE

HEALTH RECORD AND EXAMINATION FORM  
Approved by the Kent County Medical,  
Osteopathic and Dental Societies.

Name of Child \_\_\_\_\_ Date of Birth \_\_\_\_\_  
Address \_\_\_\_\_ School \_\_\_\_\_

HEALTH RECORD  
(to be filled in by parent)

Weight at Birth \_\_\_\_\_ Age of Walking \_\_\_\_\_ Age of talking \_\_\_\_\_

Significant History (give approximate year):

Allergy \_\_\_\_\_

Operations (specify) \_\_\_\_\_

Asthma \_\_\_\_\_

Cerebral Palsy \_\_\_\_\_

Convulsions \_\_\_\_\_

Diabetes \_\_\_\_\_

Handicaps (specify)

Eczema \_\_\_\_\_

Congenital defects

Epilepsy \_\_\_\_\_

German Measles \_\_\_\_\_

Hay Fever \_\_\_\_\_

Heart Disease \_\_\_\_\_

Deformities

Kidney Disease \_\_\_\_\_

Mouth \_\_\_\_\_

Measles (red, hard) \_\_\_\_\_

Teeth \_\_\_\_\_

Meningitis \_\_\_\_\_

Other \_\_\_\_\_

Polio \_\_\_\_\_

Hearing \_\_\_\_\_

Rheumatic Fever \_\_\_\_\_

Vision \_\_\_\_\_

Scarlet Fever \_\_\_\_\_

Orthopedic condition (specify)

Tuberculosis \_\_\_\_\_

Whooping Cough \_\_\_\_\_

Other (specify) \_\_\_\_\_

Birth injury \_\_\_\_\_

Accidents \_\_\_\_\_

Behavior (write details in blank space)

Bed wetting \_\_\_\_\_  
Disturbed sleep \_\_\_\_\_  
Finger sucking \_\_\_\_\_  
Nail biting \_\_\_\_\_  
Nervous tendencies \_\_\_\_\_  
Persistent crying \_\_\_\_\_  
Poor eating habits \_\_\_\_\_  
Speech difficulties \_\_\_\_\_  
Temper tantrums \_\_\_\_\_  
Other \_\_\_\_\_

Comments (to help the teacher better understand your child)

\_\_\_\_\_

Date \_\_\_\_\_ Parent's signature \_\_\_\_\_

DENTAL RECORD  
(to be filled in by dentist)

|            |                          |           |                                     |
|------------|--------------------------|-----------|-------------------------------------|
| Dental Key | 0 = Carious teeth        | Class I   | Removal of teeth and/<br>or surgery |
|            | / = Teeth to be removed  | Class II  | Resortation indicated               |
|            | X = Missing teeth        | Class III | Gingivitis and/or Mal-<br>occlusion |
|            | 0 = Existing restoration | Class IV  | No work needed                      |

|    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|
| UL |    |    |    |    | UR |    |    |    |    |
| 10 | 9  | 8  | 7  | 6  | 5  | 4  | 3  | 2  | 1  |
| LL |    |    |    |    | LR |    |    |    |    |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |

|                |   |     |     |    |
|----------------|---|-----|-----|----|
| Classification | I | II  | III | IV |
| Malocclusion   |   | Yes |     | No |
| Gingivitis     |   | Yes |     | No |

Comments or Recommendations

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date \_\_\_\_\_

Signature \_\_\_\_\_  
(examining dentist)

Print or  
Type Name \_\_\_\_\_



# Appendix B<sub>3</sub>

## CHARACTERISTICS OF STUDENTS\*

|                                                    | <u>Col.#'s</u> | <u>Sp.'68</u> | <u>Sp.'69</u> |
|----------------------------------------------------|----------------|---------------|---------------|
| Name of Child _____                                | 1 - 4          | _____         | _____         |
| Birthdate _____                                    | 5 - 6 mo.      | _____         | _____         |
| month            day            year               | 7 - 8 day      | _____         | _____         |
|                                                    | 9 - 10 yr      | _____         | _____         |
| Address _____                                      |                |               |               |
| _____                                              |                |               |               |
| Name of Father _____                               |                |               |               |
| Name of Mother _____                               |                |               |               |
| 1. Racial or Ethnic Identity                       | 11             | _____         | _____         |
| (1) black                                          |                |               |               |
| (2) white                                          |                |               |               |
| (3) oriental                                       |                |               |               |
| (4) Mexican-American                               |                |               |               |
| (5) other                                          |                |               |               |
| 2. Living with:                                    | 12             | _____         | _____         |
| (1) mother only                                    |                |               |               |
| (2) father only                                    |                |               |               |
| (3) mother and father                              |                |               |               |
| (4) mother and stepfather                          |                |               |               |
| (5) father and stepmother                          |                |               |               |
| (6) stepfather and stepmother                      |                |               |               |
| (7) foster parents                                 |                |               |               |
| (8) other relatives                                |                |               |               |
| (9) other people - not relatives                   |                |               |               |
| 3. Number of children living in home               | 13             | _____         | _____         |
| (Code number: 10 or more code 9)                   |                |               |               |
| 4. Birth rank in family(Code: 1st, 2nd, etc.)      | 14             | _____         | _____         |
| 5. Major occupation of head of household           | 15-16          | _____         | _____         |
| _____                                              |                |               |               |
| (fill in - if needed, describe on back)            |                |               |               |
| SES Duncan                                         |                |               |               |
| 6. Ed. level of Mother (Code: last grade attended) | 17-18          | _____         | _____         |
| 7. Ed. level of Father (Code: last grade attended) | 19-20          | _____         | _____         |

|                                        | <u>Col.#'s</u> | <u>Sp.'68</u> | <u>Sp.'69</u> |
|----------------------------------------|----------------|---------------|---------------|
| 8. Residence                           | 21             | _____         | _____         |
| 1 = own home                           |                |               |               |
| 2 = renting                            |                |               |               |
| 9. Language used in home               | 22             | _____         | _____         |
| 1 = English only                       |                |               |               |
| English and _____ (fill in)            |                |               |               |
| No English, but use _____ (fill in)    |                |               |               |
| 10. Number of times absent from school | 23-24          | _____         | _____         |
| _____ (Fall sem.'68 or thru 2-1-69)    |                |               |               |

\*Completed by teacher, teacher-aide or parent interviewer.

Appendix B<sub>4</sub>

INDIVIDUAL STUDENT EVALUATION

Teacher:

The evaluation group needs the following information on a sample of children in your Head Start Classes. Because of your close contact with the children and the personal nature of the questions, you will see that only you could provide reliable information. We know that this will take time but the effort will help us to further improve our program.

Specifically, these questions duplicate, for each child, information already obtained from their parents. We hope to assess the adequacy with which parents understand the program and their own child's performance. We want to determine if additional efforts are required on our part to better inform the parents and thereby make them more effective adjuncts to the program.

Thank you very much.

Child's Name \_\_\_\_\_ Sex of Child \_\_\_\_\_

Instructions: Responses are coded (1) or (0). Please place either a (1) or (0) to indicate your response in the column titled "code." Although these responses may not exactly describe your feelings we need them in this form for comparison to the parental responses; therefore, please use only the responses provided.

11.

- h. How many times have you talked with his/her parents?  
(1) Quite a bit                      (0) Not very much

12.

- a. When this student comes to school, does he/she usually:  
(1) Appear eager to attend Head Start classes?  
(0) Act like he would rather have stayed at home?
- e. Do you think that this student feels that the work is:  
(1) Too difficult for him?  
(0) Too easy for him?
- f. Do you think that the work this student is doing in school:  
(1) Is too difficult for him/her?  
(2) Is too easy for him/her?



g. Do you feel that this student behaves differently since attending the program?

(1) Yes (0) No

j. Do you really think this program will help this student?

(1) Yes

(0) No

1. Go farther in school. (1) Yes (0) No

2. Get better grades. (1) Yes (0) No

3. Get a better job. (1) Yes (0) No

4. Get along with others. (1) Yes (0) No

(please give us your general impression in 12j, and then give us your specific feelings for 12j #1-#4)

13.

e. Do you think this student has a:

(1) Better than 50-50 chance of finishing high school?

(0) Less than 50-50 chance of finishing high school?

f. Do you think this student has a:

(1) Better than 50-50 chance of going to college?

(0) Less than 50-50 chance of going to college?

g. Do you think this student has a:

(1) Better than 50-50 chance of getting a good job?

(0) Less than 50-50 chance of getting a good job?

In most of the following questions there are more than two possible responses. Please pick only one and place its number in the column marked "code" at the right.

h. How far do you expect this student to go in school?

1. To quit as soon as he can.

2. To continue in high school for a while.

3. To graduate from high school.

4. To go to secretarial, trade or business school.

5. To go to college for a while.

6. To graduate from college.

i. What kind of grades do you expect this student to make in school?

1. Mostly A's

2. Mostly B's

3. Mostly C's

4. Mostly D's

5. Mostly E's

14.

a. How well does this student get along with other children?

- (1) Very well
- (2) Fairly well
- (3) Rather poorly
- (4) Very poorly

b. Do you think Head Start has helped this student get along better with other children?

- (1) Yes
- (0) No

c. How well does this student get along with the teacher?

- (1) Very well
- (2) Fairly well
- (3) Rather poorly
- (4) Very poorly

00. In general, do you think his/her parents think that the:

- (1) Work is too hard for this student?
- (0) Work is too easy for this student?

Appendix B<sub>5</sub>

TEACHER'S GROUP EVALUATION

This questionnaire is to provide us with information on your general attitudes about the Head Start Program. Please make your responses in terms of what you feel is most typical of the whole class or classes you teach. These questions correspond in most cases to information we have already gathered from parents. Your responses will provide us with a basis of comparison. Most questions have two or more possible responses. Please select one answer only and record the number that matches it in the column marked "code" at the right. A few will require a brief statement on your part. Space is provided in such cases.

- 11.
- a. How much do the parents know about the Head Start Program?  
(1) Quite a bit  
(0) Not very much
  - b. How much has the school told the parents about the Head Start Program?  
(1) Quite a bit  
(0) Not very much
  - c. We understand the school contacted the parents to get children into the program. Have you asked parents to help in the program since then?  
(0) (If no, place zero in space at right and skip to 'e')  
If yes, place either (1) or (2) below in space at right.  
(1) Contacted by phone or teacher.  
(0) Contacted by note sent home with child or formal letter from school.
  - d. If you did contact them, what did you generally ask them to do?  

---

---
  - e. Do you think the school should have asked the parents for more help?  
(1) Yes                      (0) No
01. Are the parents of these students capable of helping in the Head Start program?  
(1) Yes                      (0) No



- f. Can they best help by:  
(1) Contributing to the planning and developing of the objectives of the program?  
(2) Assisting the teacher with extra curricular details and tasks?
- g. Do you think it helps the children when teachers and parents talk together?  
(1) Yes (0) No
- j. Do you think you have talked with the parents:  
(1) Enough? (0) Not enough?
- k. How do you think the parents, in general, feel about the Head Start Program?
- 
- 

1. Do you think the parents feel the Head Start Program has been:  
(1) Worth the trouble to send their children to Head Start?  
(0) A waste of time to send their children to Head Start?

12.

- a. When the children come to school, do they:  
(1) Appear eager to attend Head Start classes?  
(0) Act like they would rather have stayed home?
- b. Do you think that the children who attended Head Start will be:  
(1) More willing to attend school next year?  
(0) Less willing to attend school next year?  
Why or why not? \_\_\_\_\_
- 
- c. Would you say the children talk about what they are doing in Head Start at home:  
(3) A lot?  
(2) Sometimes  
(1) Seldom?  
(0) Never?
- e. Do you think the children feel the work is:  
(1) Too hard for them?  
(0) Too easy for them?
- f. Do you think that the work the children are doing is:  
(1) Too hard for them?  
(0) Too easy for them?

00. In general, do the parents think that the work is:

- (1) Too hard for the children?
- (0) Too easy for the children?

g. Do you feel the children behave differently since attending the program?

- (1) Yes
- (0) No

In most of the following questions there are more than two possible responses. Please pick only one and place its number in the column marked "code" at the right.

j. In general, do you really think this program will help the children?

- (1) Yes
- (0) No

Please give your general impression in the preceeding question and then, specific feelings in 1-4 below.

- |                                   |         |        |
|-----------------------------------|---------|--------|
| (1) Go farther in school?         | (1) Yes | (0) No |
| (2) Get better grades?            | (1) Yes | (0) No |
| (3) Get a better job?             | (1) Yes | (0) No |
| (4) Get along better with others? | (1) Yes | (0) No |

02. Do you think that the benefits of the Head Start Program will be:

- (1) Enhanced by the childrens' social milieu?
- (0) Thwarted by the childrens' social milieu?
- (that is, family and neighborhood environments)

03. Do you think that the benefits to the child of the Head Start Program will be:

- (1) Enhanced by future experiences in the school system?
- (0) Thwarted by future experiences in the school system?

13.

e. Do you think most of the children in your class have a:

- (1) Better than 50-50 chance of finishing high school?
- (0) Less than 50-50 chance of finishing high school?

f. Do you think most of the children in your class have:

- (1) A better than 50-50 chance of going to college?
- (0) Less than a 50-50 chance of going to college?

g. Do you think most of the children in your class have:

- (1) A Better than 50-50 chance of getting a good job?
- (0) Less than 50-50 chance of getting a good job?

14.

- a. How well do you think these children get along with other children?  
(1) Very well  
(2) Fairly well  
(3) Rather poorly  
(4) Very poorly
- b. Do you think Head Start has helped these children get along better with other children?  
(1) Yes (0) No
- c. How well do you think the children get along with their teachers?  
(1) Very well  
(2) Fairly well  
(3) Rather poorly  
(4) Very poorly
- d. How well do you think the children get along with specialists in the program? (e.g., testers, psychologists, etc.)  
(1) Very well  
(2) Fairly well  
(3) Rather poorly  
(4) Very poorly
04. What do you think is more important for children in Head Start Programs?  
(1) Emphasis on academic preparatory training.  
(0) Emphasis on social adjustment.
- g. Which do you think the parents would prefer for their children?  
\_\_\_\_\_
- h. Which do you think the children are actually getting in Head Start?  
\_\_\_\_\_



## Appendix B<sub>6</sub>

Teacher:

Now that one year of our Head Start Program has been nearly completed we plan to carry out an extensive evaluation before next year's program gets under way. The following questionnaire is part of that evaluation process. After your year's experience we are particularly interested in your answers to these questions concerning encountered problems and your suggested solutions to them. The questions here will, we assume, require some time to answer so you may keep them a few days and then return them in the stamped, addressed envelope provided. Try to keep your responses within the allotted space where practicable. We earnestly solicit your cooperation since we feel that your comments and evaluations will be particularly pertinent and vital to the possibility of improvement or change. Thank you.

1. What special problems do the disadvantaged children in Head Start present to you as a classroom teacher? (for instance, foreign languages, transiency, etc.)

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2. Given these problems, what suggestions would you make to improve:
  - a. Preparation of teachers to deal with disadvantaged children.

---

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---

---

- b. The actual program itself.

---

---

---

---

3. What conditions do you think are necessary in the school itself to teach disadvantaged children?

---

---

---

---

4. Briefly describe the major problems you have encountered in the Head Start Program with each of the following groups.
- a. Administration \_\_\_\_\_  
\_\_\_\_\_
  - b. Parents \_\_\_\_\_  
\_\_\_\_\_
  - c. Specialists \_\_\_\_\_  
\_\_\_\_\_
  - d. Others (specify who) \_\_\_\_\_  
\_\_\_\_\_
5. Briefly state what experiences in your past-personal or formal training - have best prepared you to deal with the problems of Head Start in each of the following categories.
- a. Children \_\_\_\_\_  
\_\_\_\_\_
  - b. Administration \_\_\_\_\_  
\_\_\_\_\_
  - c. Parents \_\_\_\_\_  
\_\_\_\_\_
  - d. Specialists \_\_\_\_\_  
\_\_\_\_\_
  - e. Others (specify who) \_\_\_\_\_  
\_\_\_\_\_
6. What experiences or training would you recommend that teachers preparing for Head Start have? \_\_\_\_\_  
\_\_\_\_\_
7. There are two programs going on, one academic and one enrichment. If you were going to work in Head Start again which one would you prefer to work in and why would you not want to work in the other? Structure your answer around what you consider to be the major strengths and weaknesses of each program. \_\_\_\_\_  
\_\_\_\_\_
8. Do you have any recommendation for kindergarten and other elementary teachers on how to best follow up Head Start? \_\_\_\_\_  
\_\_\_\_\_

Appendix B<sub>7</sub>

PROFESSIONAL STAFF  
(Other than Teachers in Preschool Program)

Now that one year of our first full school year preschool program has been nearly completed, we plan to carry out an extensive evaluation before next year's program gets under way. The following questionnaire is part of that evaluation process. After your year's experience we are particularly interested in your answers to these questions concerning encountered problems and your suggested solutions to them. The questions here will, we assume, require some time to answer so you may keep them a few days and then return them in the stamped, addressed envelope provided. Try to keep your responses within the allotted space where practicable. We earnestly solicit your cooperation since we feel that your comments and evaluations will be particularly pertinent and vital to the possibility of improvement or change. Thank you.

1. What special problems do the disadvantaged children in Head Start present to your classroom teachers? (for instance, foreign language, transiency, etc.) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. Given these problems what suggestions would you make to improve:
  - a. Preparation of teachers to deal with disadvantaged children.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  - b. The actual program itself.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. What conditions do you think are necessary in the school itself to teach disadvantaged children?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Briefly describe the major problems you have encountered in the Head Start Program with each of the following groups:
  - a. Administration \_\_\_\_\_  
\_\_\_\_\_



b. Parents \_\_\_\_\_

c. Specialists \_\_\_\_\_

d. Others (specify who) \_\_\_\_\_

5. Briefly state what experiences in your past-personal or formal training - have best prepared you to deal with the problems of Head Start in each of the following categories:

a. Children \_\_\_\_\_

b. Administration \_\_\_\_\_

c. Parents \_\_\_\_\_

d. Specialists \_\_\_\_\_

e. Others (specify who) \_\_\_\_\_

6. What experiences or training would you recommend that teachers preparing for Head Start have? \_\_\_\_\_

7. There are two programs going on, one academic and one enrichment. If you had your choice which one would you prefer and why? Structure your answer around what you consider to be the major strengths and weaknesses of each program.

8. Do you have any recommendation for kindergarten and other elementary teachers on how to best follow up Head Start?

Appendix B<sub>8</sub>

INTERVIEW SCHEDULE

Experimental Groups

11. Parental Attitudes Toward Head Start

- a. How much have you ever heard about the Head Start Program?  
Would you say you have heard - quite a bit (1); or not too much (0) about the program?
- b. How much has the school told you about the Head Start Program?  
Would you say the school has told you - quite a bit (1); or not very much (0) about the program.
- c. We understand you were contacted by the teachers about getting your child into Head Start. Have you been asked by teachers to help in the program since then?  
(0) No - (if no, skip to "11d")

If yes, contacted:

(1) by phone or teacher (personal)

(2) note home by child or formal letter from school (impersonal)

- d. What were you asked to do?

---

executive (1)

legislative (0)

- e. Do you think the teachers should have asked you for more help?  
Yes (1) No (0)
- f. If so, how would you like to help?

---

executive (1)

legislative (0)

- g. Do you think it helps the children when teachers and parents talk together?  
Yes (1) No (1)
- h. How many times have you talked with your child's teacher?  
Quite a bit (1) Not very much (0)

- i. Can you say how many times you have talked with his/her teachers?  
(Code number)
- j. Do you think you have - talked enough (1); or not enough (0) with the teacher?

- k. What do you think of the Head Start Program in general?  
Probe: \_\_\_\_\_

Favorable (1)

Unfavorable (0)

- l. Sometimes we have to go through a lot of trouble to put our kids through school. Do you think it has been - worth the trouble (1); or do you think it has been a waste of time (0) to send your child to Head Start?

Probe: Why? \_\_\_\_\_

## 12. Effects on the Child

- a. When your child gets up in the morning, does he usually - look forward (1) to going to Head Start or would he rather stay at home (0) ?
- b. Because he was in Head Start this year, how will he feel about going to school next year? Will he - want to go (1); or will he not want to go (0) to school next year?
- c. How often does your child talk about what he is doing in Head Start? Would you say - a lot (3); sometimes (2); seldom (1); or never (0)?
- d. A lot and sometimes = (1); seldom and never = (0)
- e. If he does talk about it, does he think it is - hard work (1); or too easy (0) for him?
- f. Do you think the work he is doing is - too easy (0); or too hard (1) for him?
- g. Does he act differently since attending the Head Start Program? Yes (1) No (0) [if No, skip 'h' and 'i']
- h. Has the change been for the - better (1); or for worse (0)?
- i. How is he better or worse? \_\_\_\_\_



Please get the general impression in 12j; then, specific feelings in 1-4 below.

j. Do you really think this program will help your child?  
Yes (1) No (0)

- |                                  |         |        |
|----------------------------------|---------|--------|
| 1. Go further in school?         | (1) Yes | (0) No |
| 2. Get better grades?            | (1) Yes | (0) No |
| 3. Get a better job?             | (1) Yes | (0) No |
| 4. Get along better with others? | (1) Yes | (0) No |

13. Educational and Academic Achievement

- a. Would you say that education is a - big help (1); or not much help (0) in getting a good job today?
- b. Would you say that a person can learn more by - going to high school (1) for four years or by - working (0) for four years?
- c. Do you think that parents should be forced to send their kids to school? Yes (1) No (0)
- d. Would you say an education makes a person - happy (1) or unhappy (0)?
- e. Do you think your kid has a better than (1) 50-50 chance or less than (0) 50-50 chance of finishing high school?
- f. Do you think your kid has a better than (1) 50-50 chance or less than (0) 50-50 chance of going to college?
- g. Do you think your kid has a better than (1) 50-50 chance or less than (0) 50-50 chance of getting a good job?
- h. How far do you expect your child to go in school?
1. To quit as soon as he can.
  2. To continue in high school for a while.
  3. To graduate from high school.
  4. To go to secretarial, trade or business school.
  5. To go to college for a while.
  6. To graduate from college.
- i. What kind of grades do you expect your child to make in school?
1. Mostly "A's"
  2. Mostly "B's"
  3. Mostly "C's"
  4. Mostly "D's"
  5. Mostly "E's"

14.

- a. How well do you think your child gets along with other children?
1. Very well
  2. Fairly well
  3. Rather poorly
  4. Very poorly
- b. Do you think Head Start has helped him get along better with other children? Yes (1) No (0)
- c. How well do you think your child gets along with the teachers?
1. Very well
  2. Fairly well
  3. Rather poorly
  4. Very poorly
- d. Does your child ever talk about doing things with people in school other than his teacher and other children?  
Yes (1) No (0)  
How well does he get along with them? (probe)
- e.
  1. Very well
  2. Fairly well
  3. Rather poorly
  4. Very poorly
- g. Head Start Programs teach many things such as getting along with other children (0) and getting ready to do school work (1). Which one of these do you think your child needs the most? \_\_\_\_\_
- h. Which one of these do you think he is getting in Head Start? \_\_\_\_\_  
Getting along with other children (0); or getting ready to do school work (1) ?
- i. What improvement could be made in the Head Start Program to make it better?

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Appendix B<sub>9</sub>

INTERVIEW SCHEDULE

Parental Control Group

11. Parental Attitudes Toward Head Start

- a. How much have you ever heard about the Head Start Program?  
Would you say you have heard - quite a bit (1); or not very much (0) about the program?
- g. Do you think it helps the children when teachers and parents talk together?      Yes (1)      No (0)
- j. How often should teachers and parents talk together?  
Quite a bit (1) or Not very much (0)
- k. What do you think about the Head Start Program in general?  
Probe: \_\_\_\_\_  
\_\_\_\_\_

[Code: favorable (1); unfavorable (0)]

- l. Sometimes we have to go through a lot of trouble to put our kids through school. Do you think it would have been - worth the trouble (1); or do you think it would have been a waste of time (0) to send your child to Head Start?  
Probe: Why? \_\_\_\_\_  
\_\_\_\_\_

12. Effects on the Child

- b. Does he/she look forward to going to school next year?  
Yes (1)      No (0)
- j. In general, do you think the Head Start Program would have helped your child?      Yes (1)      No (0)

13. Educational Level and Academic Achievement

- a. Would you say that education is a big help (1); or not much help (0) in getting a good job today?
- b. Would you say that a person can learn more by - going to high school (1) for four years; or by working for four years (0) ?



c. How do you think your child will get along with the teachers?

1. Very well
2. Fairly well
3. Rather poorly
4. Very poorly

g. Head Start Programs teach many things such as getting along with other children (0) and getting ready to do school work (1). Which one of these do you think your child needs most?

h. Do you think he would get this in a Head Start Program?

Yes (1)      No (0)

INVENTORY OF TEACHER ATTITUDES TOWARD ACADEMICALLY  
STRUCTURED PRESCHOOL PROGRAMS\*

Introduction

Your responses to the following questions will not affect your assignment to the Preschool Program for disadvantaged children. You have already been accepted as a teacher. We would like, however, to be able to have some idea of what kinds of activities you prefer for preschool children. Some of the questions you may not feel prepared to answer at this time. Even so, we would like you to answer all questions. Throughout the school year we will again ask you for your views so that we may benefit from your experiences. If the Preschool Program is to be administered wisely we will need to know your thoughts. There are no wrong answers from our standpoint. A blank page is provided for any additional comments you may care to make. Thank you.

Instructions

Which one of the following pairs of statements of abilities would you prefer children to have at the completion of a year of preschool? Check only one per pair even though both may be desirable.

1. a. Ability to play alone without supervision \_\_\_\_\_  
b. Ability to explore their environment with curiosity \_\_\_\_\_
2. a. Ability to communicate their feelings to their teacher \_\_\_\_\_  
b. Ability to play with paints and clay with enthusiasm \_\_\_\_\_
3. a. Ability to name colors and objects \_\_\_\_\_  
b. Ability to distinguish words and pictures \_\_\_\_\_
4. a. Ability to recognize and name vowels and consonants \_\_\_\_\_  
b. Ability to perform simple if-then deductions \_\_\_\_\_
5. a. Ability to play alone without supervision \_\_\_\_\_  
b. Ability to name colors and objects \_\_\_\_\_
6. a. Ability to perform simple if-then deductions \_\_\_\_\_  
b. Ability to explore their environment with curiosity \_\_\_\_\_
7. a. Ability to distinguish words and pictures \_\_\_\_\_  
b. Ability to play cooperatively with their peers \_\_\_\_\_
8. a. Ability to interact with adults and teachers without emotional upsets \_\_\_\_\_  
b. Ability to name positive and negative instances of concepts such as tools and toys \_\_\_\_\_

\* This title did not appear on questionnaires given to teachers

9. a. Ability to play constructively with paints and clay \_\_\_\_\_  
 b. Ability to use affirmative and negative statements in response to questions and commands \_\_\_\_\_
10. a. Ability to communicate their feelings to teacher \_\_\_\_\_  
 b. Ability to recognize and name vowels and consonants \_\_\_\_\_
11. a. Ability to use polar opposites and prepositions \_\_\_\_\_  
 b. Ability to attend school without unusual fears \_\_\_\_\_

Please answer the following questions by writing in the one code number in the space which best represents your answer.

Code Number: 5. I agree very much  
 4. I agree somewhat  
 3. I am not sure  
 2. I disagree somewhat  
 1. I disagree very much

1. \_\_\_\_\_ Preschool programs for disadvantaged children should focus on the academic objectives of language skills and relegate nonacademic objectives, such as social adjustment, to a secondary position.
2. \_\_\_\_\_ Preschool programs for disadvantaged children should focus on social adjustment and getting the children to like school, and relegate academic objectives such as specific training in the use of adjectives and consonants to a secondary position.
3. \_\_\_\_\_ Poor children as compared to rich children need more practice in getting along with their peers.
4. \_\_\_\_\_ Language skills, among disadvantaged preschool children, are best developed through the use of guided play activities.
5. \_\_\_\_\_ Poor children profit unusually from activities which allow them to explore without the guidance of the teacher.
6. \_\_\_\_\_ Intensive direct instruction for the major part of each school day in the use of language, involving rote learning, practice, etc. is inappropriate for young preschool children from economically disadvantaged homes.
7. \_\_\_\_\_ Teachers should not interfere with the child who seems to prefer not to participate in the instructional activities.
8. \_\_\_\_\_ Intensive direct instruction in the use of language skills such as the use of vowels and consonants, producing rhyming words, if-then deductions, etc. will produce stress or anxiety in the children.
9. \_\_\_\_\_ The major task of a teacher of preschool children from economically disadvantaged homes should be to widen their breadth of experiences through play trips, storytelling, reading, etc.



10.        Readiness for later school can best be developed by focusing on social adjustment and motivation.

11.        A highly businesslike and academically oriented class for preschool disadvantaged children would violate the child's need for close affectional relations with the teacher.

APPENDIX C

SCHOOL PROGRAM EFFECTS

## APPENDIX C

### SCHOOL PROGRAM EFFECTS ON MIGRATION AMONG URBAN POOR FAMILIES\*

Clifford E. Bryan  
John Natzke  
Orel Callahan  
Earl Enge

One of the persistent problems confronting investigators who conduct research on educational programs in urban settings is that of the geographic mobility of the respondents who have been originally selected into the sample. Although this problem is generally recognized by those investigators who work in the field, most of the work done in this area has only dealt with rural-urban and inter-urban migration and not with mobility within the city, intra-urban migration. This is reflected in the census data -- only annual rates are given for migration rates moving from one city to another or from rural areas to urban areas.

This problem has become of major importance to some of the larger cities. In some large urban school systems, the rates of student turnover within a single school year for a particular school may be extremely high; those families that move from one block to the next may concomitantly be transferred from one school to another. Thus, although this issue is recognized by many educators in large urban school systems, little empirical work has been done in the area.

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\*The migrant families studied were drawn from the same populations and samples analyzed in this preschool investigation.



The high rates of intra-urban migration became increasingly salient in a phase of this investigation which dealt with samples of parents selected from a population which had been previously defined as falling within the poverty level and which dwelled within an inner-city Poverty Area.

In experiments which had been designed to test the effects of two separate Head Start Programs, a total population of 1000 children had been identified as being inner-city residents who were between ages four and five and met OEO poverty standards. Their families were classified as being within the Poverty Target Area on the basis of levels of income.

From the initial population of 1000, 180 children were randomly selected to be placed in Program "A" which was designed for the structured approach of language instruction. The same number of preschoolers were similarly assigned to Program "B", the unstructured language program. The remainder of the initial population were defined as the Control Group, i.e., they were similar to the families in Programs "A" and "B", but their preschool children were not included in any program.

At the end of the year long preschool programs, interviews were attempted with a randomly drawn sample of parents of children in Program "A", Program "B", and the parents who had been assigned to the Control Group.

For the purposes of this survey, a table of random numbers was utilized to select a sample of 30 names each from the 180 subjects listed under Program "A", Program "B", and the Control Group. This provided a total random sample of 90 families which were to be interviewed.

During the process of conducting the interviewing assignment, it was quickly recognized that the problem of intra-urban geographic mobility would have to be dealt with. The interviewers experienced considerable difficulty in locating many families even though the addresses of these subjects had been listed only four months prior to the beginning of the preschool programs.

For the most part, those children who had been placed in the Head Start Programs were located rather easily, for the teachers were able to provide generally correct information on home addresses. In only a few cases, the children in the interviewing samples in the Head Start Programs had been withdrawn from the Programs for reasons both known and unknown by the teachers. When this occurred, a table of random numbers was again used to replace those subjects who had left the school system; but this measure was resorted to rather infrequently due to the rather stable residential patterns of this sub-population.

On the other hand, there was considerable difficulty in locating the residences of many of the subjects who had been assigned to the Control Group. In one instance, there were eight randomly drawn parents in a row who could not be interviewed because their dwelling places had been condemned by the city. Many families had simply moved. In a few cases, these people were located by gathering information from the neighbors. For the most part, however, the investigators had to resort to the table of random numbers repeatedly in order to provide the necessary 30 cases for the Control Group. This method, while practical, did ultimately provide a rather stable sub-population for the Control Group which is not representative of the highly mobile parents in the lowest economic strata.



For the purpose of illustration, the following table depicts the process of the initial identification of subjects from the Target Area, the method of assigning these subjects to the three experimental groups, and the subsequent sampling of these subjects for the purpose of the exploratory survey.

From this table, it may be seen that for Program "A" there was no movement out of the school system. Although one family did change residence, the pupil remained in the program. In Program "B", one child was withdrawn for health reasons; but there were four cases in which the families had changed residence and the children were withdrawn from the program. In the Control Group, however, of the 30 subjects who had originally been randomly selected from a list of over 380 names, only 15 could be located by the investigators.

This phenomenon leads to several questions dealing with the factors of geographic intra-urban mobility, the process of the selection of subjects into the school system and the possible interaction between these two factors.

The first question deals with the selection of experimental subjects into the school system. As previously stated, there were two phases in the procedure for assigning the experimental subjects into the two different Head Start Programs. First, families with 1000 children who lived in the Target Area were identified. Second, a table of random numbers was used to assign 180 children to each program.

The teachers were then given two lists of identification numbers. One list contained the identification numbers and names of those children who had been randomly selected into the Program. The other list, which the teachers could use as a waiting list of pupils to be used for the



TABLE 1

UNIVERSE: Approximately 1000 families that:

1. Are defined as within the Poverty Level
2. Live in the Inner-city Area
3. Have children 4-5 years of age

Dates that  
Data Were  
Gathered

June, 1967

Random Selections for Programs "A", "B", and Control

|                                                                           | Program<br>"A"      | Program<br>"B"      | Control<br>Group |             |
|---------------------------------------------------------------------------|---------------------|---------------------|------------------|-------------|
| A. Subjects randomly drawn and assigned to Experimental and Control Group | N = 180             | N = 180             | N = 380          | Sept., 1967 |
| B. Random selections for Survey of Parents                                | N = 30              | N = 30              | N = 30           | April, 1968 |
| C. Actual number of interviews with original Subjects from "B" above      | N = 30 <sup>a</sup> | N = 25 <sup>b</sup> | N = 15           | April, 1968 |
| D. Percentage of Mobility of Sample of Subjects under "B" above           | 0%                  | 14%                 | 50%              |             |

<sup>a</sup>One subject had moved but remained in the Program.

<sup>b</sup>One subject withdrew for reasons of ill health.

replacement of subjects who dropped out while the program was in process, contained the identification numbers and the names of those families who were in the Control Group. The teachers, then, were to contact the parents who were listed in the Experimental Groups and inform them that their children had been selected for Head Start.

This procedure seems sound enough at face value. On the other hand, it may be that the teachers encountered the same type of problem that the interviewers did -- the problem of urban migration. As previously described, when the interviewers were confronted with this difficulty, the only immediate solution was to turn once again to the random table of numbers, select a replacement, and then try to arrange an interview. What then happened was that by a process of repeated elimination and replacement, the interviewers contacted and interviewed only those parents who had, for the most part, lived in the same residence since the time that their addresses had been recorded at the beginning of the experiment.

It may have been that the teachers resorted to somewhat the same type of solution. Having been given a list of randomly selected children, they may also have encountered situations where those who had been initially identified no longer lived at the same address. They, in turn, used a similar method of substitution, e.g., they took from the randomly drawn waiting list in order to ensure that the classroom quotas were filled.

A second explanation that may be of some value is that those who were selected into the system may have refrained from moving during the school year so that their child could remain in the school. There seems

to be a tendency for some parents to not want to move during the school year from one school system to another. If this is true, it may be that the preschool program for disadvantaged children helped to reduce mobility. In order to pursue this question further, it would be valuable to study other urban and rural areas in order to assess the impact of education upon migration.

However, the second explanation which has been suggested may not be as explanatory of migration as the first. For example, while attempting to locate parents in the Control Group, one interviewer encountered eight different sub-standard houses in one day that had been condemned. It was noticed, however, that these particular ex-residences were all located along a main thoroughfare; it may have been that some major construction was to be undertaken in this area. It did not appear that the majority of the residences or those who were included in the Programs were located in such areas as might be immediately removed.

It does seem as though both explanations may have some value. By a process of sorting and substitution, the teachers replaced those originally drawn subjects that could not be located with the more accessible children that were listed in the randomly drawn waiting group to replace those who had moved or rejected participation. Furthermore, once the children were placed in the preschool program, the parents may have been less likely to change residential locations.

On a broader scale, there are many implications for educational practice. It may be that many educational programs are inadvertently designed for those people that are rather stable. The results of this



particular sample seem to imply that the more stable people are the ones that tend to be selected into the preschool programs. Again, this may lend a greater amount of residential stability to families once the preschool children have been placed in school.

On the other hand, those who seem to exhibit a high degree of intra-urban migration may be difficult to contact for placement in programs. Furthermore, school administrators and teachers may be more reluctant with regard to undertaking the frequently unrewarding task of attempting to contact these types of people.

The evidence from this small sample does seem to point to some need to consider the differential rates of intra-urban migration between income groups. This may be a factor for consideration in the planning and construction of education programs and policies for inner-city schools. Perhaps there are more poor urban migrants than there are rural urban migrants. Finally, this study has demonstrated a need for further study of intra-urban migration rates as it is related to school attendance, academic performance, teaching practices and educational programs.

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that tend to be active in the program. Again, this was

from a project which is essentially stable, as indicated by the

school children have been placed in school.

On the other hand, those who seem to exhibit a high degree of

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The evidence from this small study does seem to point to

to consider the differential rates of intra-urban migration

groups. This may be a factor for consideration in the planning and

allocation of education programs in inner-city schools.

#### APPENDIX D

Perhaps there are some good reasons why these are

#### NURSERY SCHOOL

studies. Finally, this study has demonstrated a need for further

of intra-urban migration rates as it is related to school

academic performance, teaching practices and educational

## Appendix D

### Philosophy and Content of Unstructured Program

#### A NURSERY SCHOOL FOR DEPRIVED CHILDREN

Carolyn Varner Parks\*

The recent upsurge of interest in the area of early childhood education has led to much heated debate and controversy around the area of curriculum. The traditional nursery school appears to be under particularly heavy fire. Research designs keep appearing which explore the effects of new curriculum or adaptations of older curriculum ideas. These designs are usually conceptualized in some manner which allows comparison between the experimental curriculum and the "traditional" approach. For the most part these designs offer little or no definition of the "traditional" approach and no curriculum to be used in such an approach. One must certainly question research which fails to define its terms; therefore, it seems important to establish some base lines about the meaning of the traditional approach. To establish this base line, one should look first at the goals and aims of nursery schools in the past when presumably most nursery schools would have to be categorized as traditional. Sears and Dowley (p. 821, 822) in trying to establish such goals made the following point:

Although trends are noticeable, no universal philosophy of nursery education has emerged. In fact, little or no attempt to integrate a set of theoretical concepts is evident. In a

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\*Consultant, Grand Rapids Public Schools, Michigan, Unstructured Preschool Program, 1967-68.



survey of objectives such as this one, we can only discern common concerns related to areas of child learning and growing. In addition to the general aims of meeting needs and providing scope for growth, the specific aims seem to fall under the following headings:

1. Meeting organic needs and establishing routine habits: Eating, elimination, sleeping, washing, dressing and undressing.
2. Learning motor skills and confidences: Climbing, running, jumping, balancing, learning to use the body effectively.
3. Developing manipulatory skill: Using scissors, crayons, paste, paints, clay dough, etc., building with blocks, working with puzzles, beads, typing, buttoning.
4. Learning control and restraint: Listening to stories, sitting still, reacting to music, etc.
5. Developing appropriate behavior, independence-dependence in adult child relationships, coping with fear, angry feelings, guilt, developing happy qualities, fun, humor, healthy optimism.
6. Psycho-sexual development, identification, sex role learning, concept formation, self-understanding and self-esteem, creativity, academic subject matter.

If one examines these goals, they appear to be comprehensive enough to insure growth for any preschool age child and appropriate as a basis for curriculum planned for deprived preschoolers. However, as Sears and Dowley point out, these are specifics which have traditionally been superseded by the larger goal of meeting needs and providing for growth. The prime question then becomes one of determining how these basic considerations affect, alter or support the use of a "traditional" approach with deprived preschoolers. Let us look first at meeting the needs of these children. Although few people would deny the multiplicity of the needs of these children, research now indicates that the most blatant needs, and perhaps the most urgent ones, are those needs that fall into the area broadly defined as the area of cognitive development; that is, these children have definite needs in

the areas of concept formation, classification ability, language and related areas of development. There appears to be general agreement that this is a legitimate area of need which must play some part in the kind of experiences offered deprived children. The question of what experiences and in what manner has produced a diversity of curricula and programs for the deprived preschooler. In order to think clearly about the many programs now in effect, it seems useful to classify programs into one of the following three categories:

The first category would be composed of those programs of general enrichment which include cognitive development as a general goal, but offer no systematic method to obtain this goal. The criticism often directed toward this program is that due to the gravity of the needs of the deprived child, this type of program can not provide for growth or meet the specific needs of the deprived child. These programs are often labeled as traditional because teaching differs only in degree, and not substance, from programs offered to middle-class children. Head Start groups, either by accident or design, would appear to fall into this category.

The second category would be composed of a few experimental programs which have only the development of a particular academic skill as their goal. This program differs radically from the approaches used historically in nursery schools. The program is exemplified by the Bereiter and Engelmann (1967) program whose approach is highly structured and tutorial in feeling tone. The primary criticism directed at this program is that it basically offers growth opportunities in only one area.



The third category includes those programs which offer some systematic approach for the development of cognitive skills but do not ignore other areas of development. Hodges and Spicker recently reviewed such programs in The Young Child.

From their description, these programs appear to be traditional nursery school programs which emphasize cognitive development in a systematic manner. The net results of these "intervention" programs are not known; however, the authors reached the conclusion that "the intellectual functioning of disadvantaged children can be substantially raised by home intervention, preschool curriculum intervention or a combination of both." The finding, that intellectual gains can be made by deprived children using a modified traditional curriculum, should be of paramount interest to nursery school educators. This type of programming offers an alternative to the general enrichment program or the highly structured program. It would appear to be a comfortable and logical alternative for many educators since they can more readily sanction a program which considers all areas of development but makes provisions for known needs in the cognitive area. Another important point would be that nursery school teachers already teaching deprived children could more easily adapt to such programming and would require a minimum of further training.

The results of these programs seem to point the way for curricula which are a modification of the traditional approach. The following curriculum is an attempt to spell out such a modification. It is a program which uses a traditional framework, a definitive teaching role and offers systematic experiences related to the area of cognitive development.



## DESCRIPTION OF A TRADITIONAL PROGRAM WITH A COGNITIVE ORIENTATION

This program differs little from the traditional program in terms of equipment or room arrangement. In keeping with its traditional heritage, teaching centers are maintained for the following activities: creative activities, manipulative activities, block play, dramatic play, water play, science activities, book corner and outdoor play.

Children have freedom to select from a variety of activities at all times, just as in the traditional program, but choices are more limited than those often presented in traditional programs. These limitations are felt to be important since many culturally deprived children may have had few experiences in making decisions, particularly in the area of selection of materials for play.

The basic mode of group interaction in this program consists of shifting small groups within the larger group. These groups usually have available an adult who serves as a resource person or anchor person for the group. This type of grouping seems necessary in order to maximize the growth of the culturally deprived child. Such groups offer a chance for more meaningful interactions and relationships between children, as well as between teacher and child. Language development and concept formation seem most likely to occur in small groups where teacher can listen, and can tell children the names of things, and can answer questions and promote further learnings. These groups are changing and formed by the children and are in no way related to ability grouping. This type of voluntary grouping, along with a choice of activity, are parts of the traditional program which are maintained in this experimental curriculum.

The scheduling of this program is done by using time blocks of undefined lengths. This procedure is followed since groups will differ in terms of group makeup, time available and other factors. The teacher's role in these time blocks varied according to the purpose of the time block, although the teacher always tries to utilize herself to maintain the group atmosphere described by Thompson (1944). This atmosphere is one "in which the teacher would attempt to become a warm friend, a guider and in general would more actively participate in children's play experiences as an interested and helpful adult." (Sears and Dowley) Activities for each time block and the teacher's role in each are described below.

#### BLOCK I

This time period most closely fits the period of free play of the traditional program. Small unstructured groups center around the teaching areas such as creative activities, manipulative activities, block play, etc. Materials for daily programming are selected on the same basis that materials are selected for traditional programs. This means that activities are available which fit the capabilities of the children and provide for a maximum of growth and learning. Teachers could be guided in their selection of materials for this time block by existing nursery school literature such as Hartley, Frank and Goldenson's Understanding Children's Play; Katherine Read's The Nursery School, and other curriculum books.

The adult's role in this time block consists of stationing himself at one of the main teaching centers (those which appear to be of most interest to the most children such as block play or the creative table)



and working primarily with those children who group around them. This grouping is voluntary and may be due to the nature of the activity or the child's relationship with either his peers or the adult. The adult concerns himself primarily with those children around him and uses himself to guide and extend the children's learnings in the fashion described by Wann, Dorn and Liddle, in Fostering Intellectual Development.

When the adult senses that some children have reached the satisfaction level for constructive play in a particular center, he moves to another center. It is hoped that some children from the original group will form part of a new group at this center. In this way, the adult serves as an anchor person for a nucleus group and is using himself as a guide for children's activities. By this method, it appears that adults may be able to establish meaningful learning experiences for children while moving them through a variety of activities. Again, the child is given a choice. He may move with the teacher, he may stay with his own activity or he may move to another group which may or may not include a teacher. The teacher, however, by using himself as a sensitive leader limits these choices, particularly, for children who can make few choices. The use of the adult as an anchor person differs from the traditional role of the teacher in programs where teachers remain stationary at the same activity and wait for children to join them (zoning) or programs where teachers float from one group to the other offering aid and assistance.

In using an adult as an anchor person, certain precautions should be taken. Teachers should plan to rotate themselves periodically from group to group during this time period and also plan to work with other



small groups during the day. The teacher must also be sensitive to the relationships created by this kind of group structuring. It would be possible for the non-sensitive teacher to be encouraging unhealthy dependent relationships or to be depriving children of the opportunity to grow in their ability to select and maintain their own play interest.

Because of the many precautions that need to be taken in using adults in this manner, this use of the adult as an anchor person may be more appropriate at the beginning of the school experience of the disadvantaged child. After an initial period of guidance from the teacher, children may be able to work more independently and the teacher may switch to more traditional methods of interaction.

This time block is terminated by a short cleanup period. Putting away blocks and accessories, manipulative toys and creative materials is necessary for later time periods. Here the teacher's role is one of helping and guiding children in the cleanup of the room. The teacher should try to establish the kind of atmosphere which makes cleaning up a job to be done and one in which most children are expected to participate. There should be no emphasis on having children put away those things which they have used since some children may hesitate to use materials if they have to put them away later. The teacher should remember to give children some warning that cleanup time is approaching and what the next activity will be. She should also remember to thank children for their help and not make an issue over the fact that all children do not participate equally in tasks. It seems important to establish the idea that everything does not have to be spic and span

in order for the program to continue. The teacher and children should do those things which establish order in the room, but tasks like sweeping up or washing paint cups can be done later or after children have gone home.

The teacher should also be aware that cleanup time offers children a good chance to practice classification tasks. The teacher in giving a child a task such as "putting the little cars in the green box" is requiring the child to discriminate the small cars from everything else in the room and also is requiring the use of color concepts and the understanding of a word such as "in." The teacher must be available to help children avoid misclassification and to guide them toward clearer classifications. This practice can not be conducted when children are required to put away one thing before using another or the teacher does all the cleaning up, or the teacher does not provide specific containers or places for equipment.

## BLOCK II

This time period is reserved for snack time and differs very little from the traditional program in terms of the teacher's role. It should be noted that the teacher's role is to encourage and direct conversation. Perhaps conversation only concerns the kind of juice and where it comes from or the weather or topics coming from the children's own interest. The adult should serve as a genuine listener about any topic but may also use this time as a time to introduce a concept to children and find out what their ideas are. Such concepts might include questions such as, "What do you think a mother does?" "What do you think a policeman does?" "What do you think about bosses?"



"Why does the snow melt?" These are only a few ideas, but the teacher should be aware that children are like other people in the sense that the more ideas they have around a concept the more ideas they may have about a concept. By listening and directing interesting conversations with children, the teacher can be encouraging both language development, concept formation and developing socially acceptable behavior.

As in the traditional program children should be allowed to help prepare or get ready for their own snack and when possible should pour their own juice or help in other concrete ways. Snacks should be served around small tables composed of several children and an adult. Here as in the first time block the adult primarily concerns himself with those children in his own group.

#### BLOCK III

This block of time is reserved for outdoor play or other active play. The teacher's role and the nature of the activities do not differ from that of traditional programming. Teachers again can be guided from existing literature such as Moore and Richard's Teaching in the Nursery School. (p. 39-43).

#### BLOCK IV

This block of time differs most radically from traditional programming. It is a time for focusing upon cognitive activities. It is assumed that such focusing requires that the room be relatively free of distracting elements such as use of motor equipment, large blocks, paints or materials left over from previous activities. As in previous time blocks, the child is given a restricted choice of activities. He



may choose either a structured, teacher-directed activity or an activity which centers around self-correcting equipment such as fit-a-space, peg boards, parquetry blocks, puzzles, certain types of Montessori equipment, etc. The teacher should use such equipment to set up a variety of centers so that children may work individually or in small groups with or without a teacher. Two important points should be made to the teacher at this time. The first is that children should be taught that this is a special time for learning activities and that people need a relatively quiet atmosphere in which to think best. The teacher should realize that this restraint will not be equally attainable for all children and should provide activities for those children who are not yet ready to participate in all parts of this time block. The teacher should impress upon children that this is a special and a fun time. The teacher's interest and enthusiasm in cognitive activities are important in establishing children's interest and enthusiasm for such activities.

The teacher-directed activities focus on the development of cognitive skills and particularly on the development of concepts. The importance of helping children develop adequate concepts becomes understandable if we assume that the ability to use concepts and symbols is basic to logical thinking, and that such thinking is a prerequisite for success in school and necessary in order to cope with the complexities of living in our society.

If we want to help children obtain concepts we must know how concepts are formed and provide those experiences which facilitate such development. Sigel, in Hoffman and Hoffman, makes the following statement concerning the development of concepts.

Concepts are required through a complex set of processes. The child had to learn to recognize and identify objects. That is to say, he has to learn that objects exist, have permanence and differ one from the other. Identification and subsequent naming follow. Further, he must learn not only to identify the whole object, but also to define its manifold characteristics. He learns that various objects have multiple characteristics and attributes; a chair is something more than to sit on. In addition to such discrimination he learns to perceive commonalities among diverse stimuli. Diverse items are organized into classes or categories that are labeled in conventional terms. Language both facilitates and directs this categorization process, since it provides the tools by which to identify the commonalities. (p. 210)

This process is one that is occurring in the lives of young children every day in both the home and school situation, however, it may be that the deprived child has learned few concepts or has not learned conventional terms for such concepts. The nursery school should offer experiences which contribute to concept formation in all blocks of time. It is assumed that children are learning when they manipulate and explore their environment; however, there are some indications that small groups which are teacher-directed offer essential supplementary experiences which not only increase children's ability to classify but also broaden the basis for such classification. Sigel and Olmsted in some recent research with deprived kindergarten children found that these children developed greater classification skills using a small group training procedure which they called "guided discovery." By using this technique, children were able to produce more groupings of real objects and were able to increase the variety of criteria used for classification. The technique involved small groups meeting for 15-20 minutes daily for 20 sessions, which were removed from the larger group, and guided by the teacher in an examination and discussion of objects, their relationship to each other, similarities, differences, etc.



## TRAINING PROGRAM

Because these findings seem relevant to the purposes of this time block both in terms of objects presented and the teacher's role, the entire training procedure is presented in the following pages:

If teachers regard the findings of Sigel and Olmsted as important ones and the training procedures as something which could be tried with younger children, they, then must develop ways of bringing these experiences into the classroom. This time block is designed to give the teacher the opportunity to bring these activities or similar activities into the classroom. These activities can be presented as teacher-directed games along with other games whose purpose it is to help children identify and describe real objects and to move to higher levels of abstraction and to learn some basic classifications. It does not seem advisable to attempt to spell out all possible games for teachers but rather to discuss some general guidelines for these games and to present a few examples to stimulate teachers thinking and planning for their own classrooms. It seems important to note that games offered to children should have definite names and procedures. A sameness in format is needed in order that children have the security of knowing how the game is played and what they are expected to do. Games should also be developed which can be altered in content when the teacher wishes to help children explore other properties or characteristics of objects. An example of this type of game might be one which is called the "Search and List" game. The teacher asks each child to secure from the room something which fits into a particular category such as "red." The teacher then discusses



the objects with the children in much the same way as described in the research training procedures, thus helping children to understand that red can be a characteristic of a number of different things. The teacher could then make a list of the objects for the children pointing to each object as she writes the word. Hopefully, this listing will help children understand that there is some relationship between the word (a symbol) and the object. After the children understand how to play this game, the teacher can use it as a vehicle for not only discussing other color concepts but also as a means of exploring other properties of objects. This is accomplished by simply asking children to look for objects which are round, wooden, plastic, metal, etc., or objects which can be used to sit on, to drink out of, etc. A sophisticated version of this game might be one which required children to look for things which have two properties such as red and wooden.

The research procedure and the above game have been presented in order to give the teacher some ideas and guidelines in developing games which are relevant to the teacher's own group. Both procedures involve giving children a chance to focus on the properties of objects. They involve manipulation and discussion of real objects. Additional games which continue this process and try to establish some relationship between objects and some symbol for the object are presented in the following pages.

#### SCREEN GAME

Have children identify an object hidden behind a screen or barrier by the sounds made by the object. Include a motoric response after identification.

For example, have children name musical instruments from the sounds they make and then demonstrate how they are used.

Another suggestion might include taping sounds made by real objects which are available as pretend objects in the nursery school. Ask children to identify the objects and bring them to the group for discussion. This might include sounds made by animals, transportation media and mechanical instruments such as telephones.

#### BAG GAME

Using a bag or pillow case, place several objects inside. Have children identify objects by feel. Remove objects and discuss them after all children have guessed the content of the bag. Useful for teaching concept of shape, dimension, weight, etc. Can also be used as a classification task by including objects belonging to one class such as color, material, etc.

These two games and similar games are means of giving children practice in recognizing a whole concept (for example, a drum) from a characteristic of the object (its sound). We react daily to this kind of symbolism. For example, the ringing of a telephone brings to mind the whole object, its function and appropriate behavior. This same type of process is occurring when we read the word, telephone, however, before developing the ability to use written symbols, children are able to deal with those symbols which are related perceptually to the whole object. The feel, sound, taste, or smell of an object may stand for the whole object. It seems important to begin with real objects and some symbolic property before presenting games based on pictures or pretend objects which are also symbols for real objects.



### WORD GAME

Giving each child a turn, print the name of an object available in the room, on a small slip of paper. Read the word to the child and have him bring the object to the table. Match word and concrete item. For example, print the word "telephone" for a child. Have him find the telephone in the doll corner and match it with the word.

For older children, words and objects could be separated and rematched.

In this game the teacher is not attempting to push children into reading, but is trying to establish some relationship between an object and a symbol for the object (a word).

### PICTURE GAME

The teacher uses a large assortment of pictures which can be placed into a broad category such as animals, furniture, transportation, etc. Children are assigned some member of that category and are given those pictures which fit into their category. For example, one version of this game might be called the Animal Picture Game. Children would have such categories as cats, dogs, horses, cows, etc. Each child would take those pictures which fit into his category after the teacher has presented the picture and it had been identified by the group.

In this game and similar games, children are being given the opportunity to discover that a variety of abstractions can stand for the same or similar objects. We have no difficulty in identifying a picture of a dog either from a photograph, a stylized or naturalistic picture or a cartoon, but these are categorizing skills which young children are in the process of developing which may be facilitated by this type of game.



### THE SAME GAME

Here, teachers are requiring children to look for objects which are like certain objects she presents or the picture she presents of an object. This process requires that children be attentive to the characteristics of an object and discriminate it from a variety of things which are similar to it. Knowing likenesses and differences are essential when one tries to categorize a variety of things as well as being important skills necessary to reading and other school related activities.

An example of this game might be one which involved the use of pegs and the pegboard. Children might be required to select a peg like the one the teacher selects or place it on their own board or the teacher might use blocks of particular shape or color and ask children to select a duplicate block. Each child might be given a box in which to place his selection.

After children have had much practice with real objects, the teacher might present pictures of objects and ask children to match real objects to the pictures. For example, the teacher might use flash cards which contain the alphabet and ask children to pick out plastic or wooden letters which match the picture of the letter. The purpose of the game is not to teach the alphabet but to give children practice in discovering those things which are alike.

Commercial lotto games also offer children practice in matching those things which look alike. The teacher should be very sure that children understand that these are pictures of objects and that they have some

idea about what these objects are before using such games a great deal in the classroom. Lotto games present pictures of real objects and are useful as symbols but do not replace experiences with concrete objects.

The games which have been presented do not preclude the use of other types of experiences during this time block. This time can also be used as a time when teachers present other concepts which are not easily presented in a game form. Science experiences such as those described by Haupt, in Science Experiences for Nursery School Children, short neighborhood field trips and follow-ups, storywriting, films, etc., might also be presented in this time block or during the earlier period designated as Block I. Ideally, different types of learning groups would be available at the same time during this time block and children would have the opportunity to participate in one or more groups during this time, however, the number and extent of such activities should reflect the nature of the group, the staff and the time available.

#### BLOCK V

This time is reserved for lunch in those programs which include lunch. The purposes of lunch and the teacher's role are similar to those described in the time block reserved for juice. Teachers should try to involve children, periodically, in meal preparation and daily in responsibilities such as table-setting. Learning the accepted placement of the plate, glass, fork, spoon, and napkin may be new experiences for children. Table-setting also requires that children



learn the one-to-one relationship necessary for a complete place setting. The teacher should try to establish a warm and relaxed atmosphere around the lunch setting. This means that few rules will be made concerning manner of eating and selection of food. Children should be given the opportunity to select or refuse the food which is available. Teachers should name foods and ask children if they would like to have some but should not pressure children into selection. Adults should set a good example both in the terms of the food they select and manners used during eating. It seems highly improbable that the child who is required to use "please" and "thank you" and not treated courteously by the teachers is learning very much about manners. Perhaps the better way is to treat children courteously and let manners develop as a matter of imitation.

Children and adults should be seated at small tables with at least one adult at each table. The adult is responsible for establishing and maintaining a real conversation with children. Topics of conversation might include the foods available (color, texture, origin, etc.) nursery school activities which have happened today, plans for tomorrow, or other topics of interest to children. Teachers should encourage all children to participate and she should serve as a genuine listener. These conversations can offer children a chance to practice language, learn new concepts, establish ideas about group interchanges and add to their ideas about socially acceptable behaviors around meal-time.

Since many programs have lunch in their playrooms, definite plans for after lunch activities and dismissal should be made by the teacher. Activities which offer a great deal of body movement may need to be



offered at this time if children have been in relatively non-active activities (which includes lunch) for a fairly long time. Perhaps the teacher offers the choice of music, block play, doll corner play, outside play or a story group for those children who are ready and able to listen. The number of activities available to children at this time may well be dependent on the space available and if the staff must be in the process of getting ready for another group. At any rate, teachers should look at their particular situation and make those plans which seem best for them and their children. Children should be given some warning that it is almost time to go home and helped in obtaining wraps or products to be taken home. The teacher should try to greet the person who picks up the child and establish a warm relationship with them but she should not use this time for a conference with parents since these are best handled when the child is not present.

#### SUMMARY

The preceding pages have been an attempt to spell out a skeleton framework of an experimental curriculum for deprived preschool children. The curriculum is an adaptation of traditional nursery school programming and operates basically by using small groups, both spontaneous and teacher-directed, within the larger group. The focus of these groups is on cognitive development and specifically on concept formation. It is assumed that these small groups, which involve much interaction and verbal exchange between children and teacher, will facilitate language development. It seems logical to assume that children who

have had many chances to discuss and explore their environment as well as to ask questions about it, will have more language available to them and progress in their ability to use language.

This curriculum has not focused on activities which are specifically language related or on books and related activities. This does not mean that books are not present in the classroom or that reading does not occur. It is assumed that teachers will use relevant books to extend children's learnings during all time blocks as well as to help children discover that books are sources of answers to their questions. It also means that the teacher presents books which have some meaning to children, which can be looked at by children or read to children during any time block. The one thing that does not seem desirable is to try to set a designated time during the day when every child will be involved in a story group and read books which may not be relevant to either the child's interest or his environment.

All of the curriculum suggestions which have been presented are not seen as recipes for teachers but rather as suggestions and ideas which they may find helpful and adaptable in their own situation.

## BIBLIOGRAPHY

- Bereiter, Carl and Engelmann, Siegfried, Teaching Disadvantaged Children in the Preschools, Englewood Cliffs, N. J. Prentice-Hall, Inc., 1966.
- Hartley, Ruth, Lawrence Frank and P. M. Goldenson, Understanding Children's Play, New York, Columbia University Press, 1952.
- Haupt, Dorothy, Science Experiences for Nursery School Children, National Association for the Education of Young Children, Washington, D. C.
- Hodges, Walter L. and Spicker, Howard H. "The Effects of Preschool Experiences on Culturally Deprived Children," in The Young Child ed. by Nancy Smothergill and William Hartup, National Association for the Education of Young Children. Washington, D. C., 1967.
- Moore, Sallie Beth and Richards, Phyllis, Teaching in the Nursery School, Harpers and Brothers, New York, 1959.
- Read, Katherine, The Nursery School: A Human Relations Laboratory, Philadelphia, W. B. Saunders Co., 1961.
- Sears, Pauline S. and Dowley, Edith M., "Research on Teaching in the Nursery School," in Handbook of Research on Teaching, ed. by N. L. Gage, Rand McNally and Co., U.S.A., 1963.
- Sigel, Irving, "The Attainment of Concepts," in Review of Child Development Research, Vol. 1, ed. by Martin Hoffman and Lois Hoffman, Russell Sage Foundation, New York, 1964.
- Sigel, Irving and Olmsted, Patricia, Modification of Classification Competence and Level of Representation Among Lower Class Negro Children, The Center for Developmental Studies in Cognition, The Merrill-Palmer Institute, 1967. (mimeographed - used with permission of authors).
- Wann, Kenneth, M. E. Dorn, and E. A. Liddle, Fostering Intellectual Development in Young Children, Bureau of Publications, Teacher's College, Columbia University, New York, 1962.



Teacher Training and Program Surveillance

TEACHER TRAINING

The investigation was designed to determine the effectiveness of the program in the area of teacher training. The investigation was conducted under the supervision and coordination of the program manager, who was responsible for the selection of the teachers and the development of the program. The program was designed to provide the teachers with the necessary knowledge and skills to be effective in the classroom.

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APPENDIX E

TEACHER TRAINING AND PROGRAM SURVEILLANCE

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## Appendix E

### Teacher Training and Program Surveillance

#### TRAINING OF TEACHERS

The investigators arranged for the pre-service and in-service training of teachers to be conducted under the philosophies and recommendations of two expert consultants, personally unknown and institutionally unaffiliated with the researchers.

The program consultant for the Bereiter-Engelmann\* experiment, was Mrs. Jean Osborn, a faculty member of the University of Illinois. Mrs. Osborn is an associate of Dr.'s Bereiter and Engelmann in the development of their program. The program consultant for the Enrichment program, was Mrs. Carolyn Parks, who is on the faculty of the Merrill-Palmer Institute and has had extensive experience in the training of preschool teachers. A description for us written by Mrs. Parks of her philosophy and the type of activities she emphasized in her in-service program is included in Appendix D, "The Nursery School for Deprived Children". It should be clearly understood, however, that the preschool program for which Mrs. Parks is consultant, is not a program of the Merrill-Palmer Institute. Inasmuch as a general description of the Bereiter-Engelmann program has been published by Bereiter and Engelmann, a similar report from Mrs. Osborn was not obtained.

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\*The Bereiter-Engelmann experimental programs of this investigation are now known as the Distar<sup>TM</sup> Language I, Distar<sup>TM</sup> Reading I, and Distar<sup>TM</sup> Arithmetic I programs, and are published by Science Research Associates, Inc., Chicago, Illinois. Earlier statements of the philosophy and methods of these programs can be found in Carl Bereiter and Siegfried Engelmann, Teaching Disadvantaged Children in the Preschool, Englewood Cliffs, New Jersey: Prentice-Hall, 1966, and Siegfried Engelmann, Preventing Failure in the Primary Grades, Chicago, Illinois: Science Research Associates, Inc., 1969.

## SURVEILLANCE OF PROGRAMS

In order to assure that the Experimental Programs were conducted in accord with their program outlines and philosophies, and to avoid teacher perception of undue surveillance and harassment, it was decided that the surveillance of the classrooms should be as unobtrusive as possible. This was accomplished through several means. The preschool consultants and the associate research investigators visited each class regularly with each class being visited about once a week. The principal investigator, because he was defined by the teachers through other contacts as a "researcher", only occasionally visited the classes and this was done under the guise of other interests. All research observers are in agreement that the observed activities in the Bereiter-Engelmann program closely followed the guidelines for the Bereiter-Engelmann program as expressed in their publications and in the pre-service and in-service training programs. While the observers are of the opinion that the teachers varied in competence, (although a criterion of competence was not established), no teachers in the Bereiter-Engelmann program were observed in activities which were not in accord with the guidelines for the Bereiter-Engelmann program.

As we expected, the classroom activities and the conduct of the teachers in the Enrichment program were observed to vary more than in the Bereiter-Engelmann program. One major concern was to determine if teachers in the Enrichment program were engaging in activities similar to the Bereiter-Engelmann activities. The conclusion of all observers was that while there was more variation among the Enrichment classes than among the Bereiter-Engelmann classes, no classes in the Enrichment program were similar to



classes in the Bereiter-Engelmann program either in terms of content emphasis or predominant method of instruction. In addition, the research investigators on the basis of teacher logs and teachers' written and oral descriptions of their day to day activities, concluded that the teachers in the Bereiter-Engelmann program and the Enrichment program were not all alike in either their emphasis on skill training activities or their methods of instruction. The Bereiter-Engelmann teachers appeared to follow very closely "operant principles" for language behavior modification.